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ComputerWeekly

Thursday, January 6, 1983

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Privacy Bill is published at last

by our Parliamentary correspondent

THE Home Office has made minor concessions to public pressure in the final draft of the Data Protection Bill which was published on the eve of Parliament's adjournment for the Christmas recess.

Timothy Raison, junior Home Office minister, revealed the details in a briefing. The Government has accepted that there should be limited access to police, customs, immigration and tax authorities' computer-held records. But this will not go much further than establishing that such records exist.

The government is not allowing disclosures which might handicap the authorities in preventing or detecting crime.

The Bill is based mainly on proposals in the White Paper on Data Protection published in April. It will allow the UK to ratify the European Convention for the Protection of Individuals which deals with automated processing of personal data.

The Bill confirms that there is to be an independent registrar, appointed by the Crown. His job will be to enforce observance of the principles set out on the manner in which computer data is kept.

Individuals will be allowed access at reasonable intervals without undue delay or expense to data of which they are the subject.

The registrar will maintain a register of details of users of computers and the personal data which they hold. It will become an offence with a £1,000 penalty to operate unregistered or in contravention of the registered details.

But the chief sanction will be the registrar's ability to have someone abusing the restrictions on the storage of data struck off and barred from operating his business.

There will be a ban on the transfer of personal data to any place outside the United Kingdom where there is no similar data protection machinery.

There is provision for appeals to a data protection tribunal against the registrar's decisions. Individuals can seek compensation in the courts for damage suffered because of inaccuracy or loss or unauthorised destruction or disclosure of information.

Junior minister Timothy Raison revealed the details of the Bill.

Breach of contract could cost TSB £1.5m

by George Black

AN independent arbitrator was due to give judgment on Tuesday in a case in which software house Master Resources claimed £1½ million compensation from TSB Computer Services.

The Trustee Savings Bank subsidiary had been found to be in breach of its contract with the firm from Wilmslow, Cheshire. A spokesman for MRL said that the firm had been contracted to provide services for TSB's consultancy division, mainly to supply customers on a cost- and profit-sharing basis. But TSB, he said, had ended the arrangement without giving notice and without finding any fault with MRL's performance.

The dispute seems to have had its origin in a policy shift at the TSB, prompted by the Page Committee report of 1973. Page argued that the 16 related regional trustee savings banks and their six major central companies should become a "third force" alongside the banks and buildings societies, thus breaking up the old national savings movement.

The government's endorsement of Page's recommendation to privatise was written into the Trustee Savings Bank Act of 1976 and the Banking Act of 1979.

The phased release of the trustee savings banks from government controls led to the setting up of the central trustee savings bank, recognised by the Bank of England in 1980.

TSB, reputed to be one of the most technologically progressive of the financial institutions, operates a computing arm to provide facility for its own branches.

Users get right to buy leased IBM kit

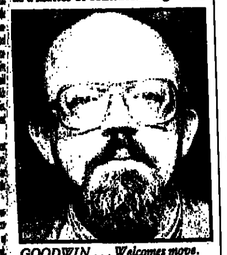
by Kevan Pearson

IBM users can now buy their leased equipment by right, because the company has made a second U-turn on its Sale of Installed policy.

And the move could signal the shutdown of the company's leasing subsidiary, IBM UK Rentals.

IBM has undertaken a major relig of its Sale of Installed policy which allows users to convert rental deals into outright purchases.

Under the new SoI policy rentals of all types of IBM kit can be converted into outright purchases as a matter of contractual right. To



GOODWIN ... Welcomes move.

qualify, equipment leased and installed after January 1, 1983, must have been installed at least one month before SoI is applied for. Kit installed before this date also qualifies on the one month rule.

Previously SoI was available at IBM's discretion and equipment must have been installed for at least 18 months, even though the term of the lease might have been as low as two years. In the past, availability of SoI has been based on a pre-determined limit, expressed as a proportion of the company's overall sales.

This resulted in June 1982 in the total suspension of SoI because the limit had already been reached.

In October 1982 the company reintroduced SoI on certain product lines.

George Goodwin, of IBM Computer Users' Association says: "We welcome any increase in the choices that the user gets. It now appears that you can buy equipment at any time. This brings IBM UK into line with the rest of IBM Europe."

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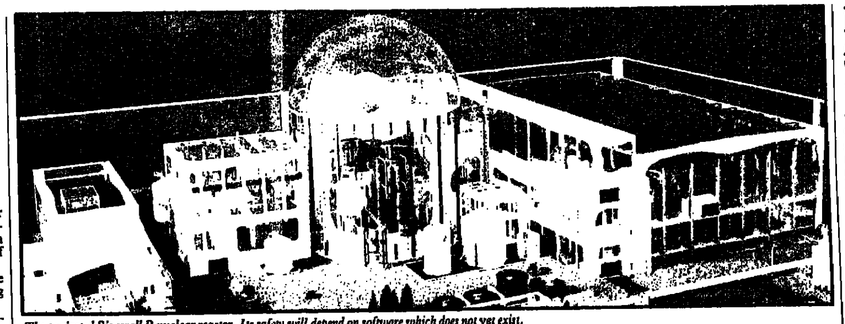


The projected Sizewell B nuclear reactor. Its safety will depend on software which does not yet exist.

Unwritten software is key to Sizewell

by George Black

COMPUTER control systems will be a key issue at the Sizewell nuclear reactor inquiry which opened on Tuesday – but the reactor's hardware has not been chosen and the software has not been written.

Objectors to the £1.2 billion plan for a pressurised water reactor see the plan as an attempt to try out a new and untested system in this country after similar systems have failed to gain approval in the US.

The controls would be based on the Westinghouse integrated protection system – but a similar software-based system devised by the American General Electric failed to gain a licence in the US.

Previous British schemes have been hardware-based and according to Friends of the Earth not enough is yet known about software substitutes.

William Cannell, FoE's safety researcher, said: "The computer angle is rather more worrying than most other aspects of the matter.

"The US nuclear regulatory commission refused permission for this approach to the problem and even the British Nuclear Installations Inspectorate, which we don't regard as particularly independent, was not at all convinced by it. We are afraid they will try to skate over this issue."

The CEGB, which is said to be spending between £2½ million and £5 million on persuading Inspector Sir Frank Layfield, says it cannot put parts of the project out to tender until the inquiry is over. The main contractor is Westinghouse Power Systems, but they were unable to say whether the computing element would be subcontracted out and if so to whom.

But a board spokesman said that the latest thinking would be adopted and it was possible to establish the safety of the operations from design documents.

Walter Patterson, a veteran American anti-nuclear campaigner and associate of Friends of the Earth, said computer faults had played a major role in the near-disasters at Three Mile Island, Pennsylvania, in 1979 and Rancho Seco, California, in 1978.

"All known control systems are very fragile," he said. "At Rancho Seco all it took was for a technician to drop a lightbulb and the system went haywire. Operators watched in bafflement as it tried to compensate for the short."

Control programs must ensure that the water to cool the reactor stays liquid under high pressure. Otherwise the water turns to steam which will not cool the plant effectively. The CEGB argues that duplicate and triplicate systems

■ Turn to page 6.

EEC votes £13 million to Esprit

THE EEC has agreed that about £13.8 million (23 million ECUs) should be spent on pilot projects for the Esprit programme (European Strategic Programme of Research and Development in Information Technology).

Of this, half will come from the EEC and half from industry. Two British companies, Ebsys and Scicon, have announced a contract for a pre-pilot study on the functional analysis of office work.

BIS sells stake

THE UK consultancy group BIS has sold its 76% interest in a joint-venture energy management systems company to its US partner in the venture, Margaux Controls, which makes the systems. The £300,000 deal comes just 15 months after the formation of the UK venture.

MD replaced

COMPEDA managing director Keith Trickett has lost his job following last month's takeover by Prime. He has been replaced as MD by Prime vice-president of research and development David Cheesman. Trickett says he was not surprised when Prime failed to renew his contract: "I'm a guy who starts companies."

Bureaux merge

TWO London bureaux, Time and People and Teamco EDP, have merged, to form City Data Services, with an annual turnover of about £1 million.

Director dies

ROBERT CRABTREE, director of training for Sperry Univac in the UK, has died suddenly at the age of 60. He had a long career in the industry and had been branch manager for Univac in Bristol.

Leasing firm founders jailed for $200m fraud

by Howard Karten

FOUNDERS of an American computer leasing company involved in a $200 million fraud have been jailed. Mordecai Weissmann, 35, and Myron Goodman, 36, who ran OPM Leasing Services Inc until its collapse in 1981, were sent to prison for 10 and 12 years respectively.

The New York firm leased IBM mainframes and peripherals and other hardware during the 1970s. It raised cash by claiming non-existent leases which were then used as security to raise loans.

OPM, owned by Weissmann and Goodman through a holding company called Call Trading International, was involved in trying to bring plug-compatible Japanese mainframes into the US in 1978 and in introducing IBM equipment into China in 1980. It also operated subsidiary companies in Britain, France and Germany.

Then in March 1981 it filed for bankruptcy with liabilities of more than $500 million. The then apparent excess of $50 million over assets available was put down to too many lessees invoking early termination clauses. But OPM was simultaneously the subject of several private lawsuits initiated by lending organisations against the pyramid selling technique.

Many of OPM's deals were "indemnity" leases by which in the event of early termination OPM would cover the remaining debt by re-leasing the machinery. But this part of the operation failed and OPM was uninsured for such losses.

British customers included big names like ICI, Lucas and Dunlop. Among the multinational clients were General Motors and Rockwell.

LINE NOISE

FAKE Apple micros have at last hit the UK, and Apple is fighting back quickly. Writs have been issued against two companies – though a tight-lipped Apple UK declines to name them. One of the counterfeit machines is an Apple II look-alike, the other a fake machine in a genuine Apple II case. These are the first appearance here of rip-offs riding on the back of Apple II popularity, despite the abundant crop of false Apples in the Far East and the US.

A QUIET period for Exxon Office Systems will be ending in January with significant announcements about its new strategy. It is understood that Exxon's recently appointed managing director, Patrick Regester, who is in his mid-thirties, has been reappraising the role of the standalone word processor.

HOW does Hewlett-Packard solve its much heralded claim of forward and backward compatibility when it moves from its current 16-bit systems to a 32-bit machine? HP has made clear it eventually will release a 32-bit machine for the business market, but not at the expense of compatibility. The answer could be a 32-bit machine, running under Unix, with three pro-processors running the HP250, 1000, and 3000 operating systems. Existing HP users with 16-bit software could upgrade to the new machine in a way consistent with HP's promises. A 1984 release is likely.

CASH-STRAPPED Inmos, the State-backed chip maker, seems set to get more government money after all. Another £15 million is likely to be made available through the British Technology Group, despite avowals by Industry Minister Patrick Jenkin at October's Tory conference that no more taxpayers' money would come to the company.

But the cash offer will be tied to a requirement to raise additional funding from the private sector, a route Inmos has explored already with little success.

The figure of £10 million has been much bandied about as a sum the company is seeking to pay for 1983's operations. It should ease recent problems from adverse exchange rates, but will do little to finance the hoped-for growth.

Sir Frederick Wood, BTG chairman, has estimated that Inmos will need £50 million more to become a viable chip producer, and thinks this can be raised from private sources during this coming year.

Forum to ease software financing

by George Black

HEADS of hundreds of software companies and some 20 banking institutions are expected to meet at a Software Financing Forum in the Russell Hotel, London, on January 13.

The conference, aimed at bridging the gap between banking and programming, is the brainchild of the Software Products Scheme, sponsored by the Industry Department, the National Computing Centre and the Computing Services Association.

Manager of the scheme Brian Cudby said: "We are treating this event as our most important task since the idea was re-launched last June. Contacts made during the day will measurably increase the rate of product development by British companies and provide the springboard for more meetings."

The Prime Minister, Mrs Thatcher, referred in her speech at the recent ITB2 conference in the Barbican to the need for more private financing for information technology. The forum would directly address the problem, said Cudby.

The show, to be kicked off in the morning by Industry Under-Secretary John Butcher, carries the seal of approval of IT Minister Kenneth Baker. Presentations will be made by Barclays Bank and Technical Development Capital (TDC).

Other finance houses which will probably be represented are Citicorp Development Capital, Eurofis, Prutec and CIN Industrial Investment.

"There is tremendous scope for loans, which could vary from £20,000 to £2 million," said Cudby.

A mailshot has gone out through the Association of Independent Computer Specialists to 3,000 software companies and 100 finance companies.

Delegations are being limited to three people each.

CSA wants more govt work for British firms

by Kevan Pearson

THE Computing Services Association met with an all-party group of MPs last month to press its case for a larger share of public sector work.

The CSA wants more of the massive goverment computer services activities to be placed with British companies, rather than with the internal development teams which currently do most of the work.

The December meeting, at which parliamentary secretaries represented Kenneth Baker, the Information Technology Minister, and Peter Jenkin, the Industry Secretary, was an informal event. Peter Thomas, chairman of the CSA and a director of the Pactel consultancy, said that the MPs were very sympathetic to the CSA's views.

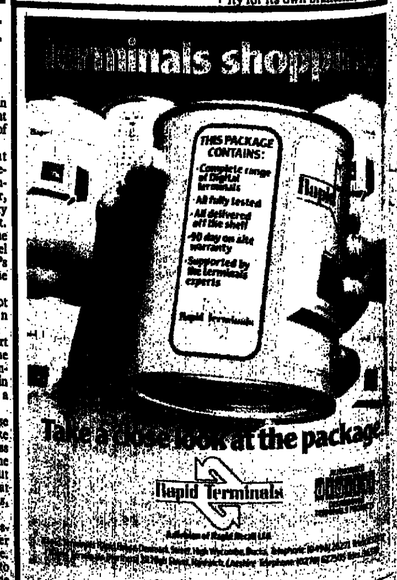
However, the association is not having the same success in persuading the government.

It submitted a 20-point report on public sector purchasing to the Central Computer and Telecommunications Agency (CCTA) in June, but has not yet received a response.

"The government should use procurement creatively to make sure it encourages competitiveness in British business. That is the point we are trying to make, but we are not being very successful at the moment," says Doug Eyeions, director general of the CSA.

The CCTA is expected to respond to the CSA's position paper sometime in the very near future. And although it is unlikely to accept all 20 points, there is some hope that substantial progress will be made on the matter.

THOMAS ... MPs sympathetic to CSA views.



Support to users criticised

by John Riley

COMPUTER manufacturers in the UK are failing in their level of technical support to users. Most manufacturers are unsatisfactory in user education, troubleshooting system faults, and documentation, according to the 1982 Computer Weekly/Datapro survey published this week (see pages 16/17).

But overall levels of satisfaction among the nearly 1,000 UK mainframe, minicomputer, and small business system users that responded to the survey are high.

The annual Computer Weekly/Datapro survey, which has been carried out since 1980, asked users to indicate the advantages and disadvantages of their systems; to rate the quality of software and vendor support; to evaluate whether systems come up to expectations; and to state whether they would recommend their systems to other users.

Sperry Univac came bottom of the ratings for mainframe users in 1982 and Honeywell took the wooden spoon in the minicomputer/small business system category.

In the mainframe sector, some 38% of Sperry Univac's users were unwilling to recommend their systems to others. In particular, the Univac 90 series found few satisfied users.

Last year, ICL and NCR fared worst in the mainframe section. ICL has gained significantly better ratings this year, but NCR has gained little.

Next week, further results will be published, to include the relative standing of various programming languages, and the range of applications employed by users of various systems.

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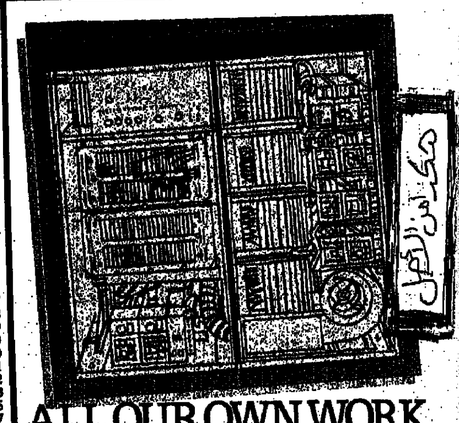

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Challenge to telecom makers

by Jack Gee

COMPUTER manufacturers will present a growing challenge to traditional makers of telecommunications equipment over the next few years, the Organisation for Economic Co-operation and Development (OECD) said in a major report published at its Paris headquarters.

OECD, a forum for the 24 leading industrial countries of the Western world, made the prediction in a document entitled Telecommunications Policies for Change.

In order to reconcile themselves to the changing face of the telecommunications industry, governments and manufacturers must follow a new set of guidelines which emphasise commercially promising projects, the report added.

The report said: "With computer manufacturers entering the market, on the strength of their experience in private branch exchanges and small-scale switching equipment, the established manufacturers may face even stronger competition. . .

"The labour force will become more and more highly trained, implying considerable qualitative rise in demand for labour.

"The growing range and quality of telecommunications services will stimulate output and employment both in the data communications industry itself and in many other sectors. High technology manufacturing industries and services particularly depend on information systems, such as finance, computer services and the mass media."

Listing the criteria which this new situation set for research and development, the report said:

"At least two firms must take part in development processes in order to make competition the rule; Projects must be based on viable technologies in order to be commercially worthwhile. Projects which do not meet this requirement must be cut off;

Do not duplicate work being done in other countries. To make the best use of scarce resources and know-how, firms in different countries must join forces. Projects must complement or extend work undertaken elsewhere;

The widest possible access must be given to the results of development research conducted with public funds.

OECD stressed the need for co-operation between firms and nations as the cost of new telecommunications continues to soar. The report recalled that in the early 1960s ITT spent over $30 million to develop its electromechanical Pentaconta range of telephone exchanges.

By the 1970s the American multinational was spending $500 million to develop its computerised 1240 switching system. But this system could look forward to a working life much shorter than the career of Pentaconta which has spanned two decades.

DIERY . . . "Much more than just another personal computer."

Wang UK pins its faith in the office Professional

by Robert Parry

OFFICE automation front runner Wang is going for the big time in the UK with its 16-bit micro Professional Computer. Announced last June and now coming on show in the UK for customer delivery by March or April, the Professional will make up 40% of the company's hoped for £70 million turnover in the UK next year.

"We are looking for it to form a significant part of our turnover," says Wang UK's managing director Ian Diery. "We expect the range could account for around 40% of next year's sales in the UK, bringing in something like £30 million.

"It is definitely a volume product. I would be disappointed if we did not sell between 3,000 and 5,000 of the PC003 configuration in 1983," he added.

The 003 configuration is the one Wang expects to sell best. It is a desk-top unit with twin floppy drives, monitor and either Wang word processing software or the Multiplan financial spreadsheet program to run on the 8086 processor under an enhanced MS-DOS. It will sell for £2,995.

First machines will come from Wang's US plants, but the range will go into production in Ireland, and in Scotland when the factory there is built.

The consequence of this view of a volume product is that Wang will be taking a different approach to marketing the machines. Diery hopes to have a network of about 25 dealers, under the three established Wang regional distributors, by the end of the year. The first of these are presently being courted by Wang, and are likely to be signed up over the next six months.

Until then Wang's main marketing thrust will be to major companies buying large numbers of machines via its own salesforce. On this front Wang will be pushing the PC's compatibility with the rest of its office automation products.

Diery sees the PC competing as a standalone machine strongly with the other PC, from IBM, and the other Professional, from DEC. He also sees it as a "seed product" for installing Wang's OIS systems.

The Wang PC will integrate into OIS systems as workstations, either through direct connection or through Wang's own local area network WangNet. It also can act as workstations to Wang's VS, 2200 and Alliance systems.

"This integration through our product range, combined with first-class ergonomics, makes the product much more than just another personal computer," claims Diery. "We are trying to be unique."

DP peop ignored in quest for micro dat

by George Black

DATA processing departments being bypassed by users in ganisations who are looking where for advice on micro according to Colin Harris of National Computing Centre.

"Many of the inquiries a London microsystems centre come from user departments said. "They apparently don't their own DP people have necessary expertise. This is because the DP department losing the chance to participa planning and a lot of incompat systems are growing up as a sult."

Users now buy micros as if were stationery, he claimed, use them for modelling or information retrieval systems.

■ Some 350 British supplier computer hardware, software services have received the re revamped and expanded Nati Computing Centre publicity Marketing Aids for the Compute Industry. The free booklet, wh was sent out to industry suppl at the end of 1982, is based on a national computing index a gives details of over 30,000 inst lations.

Free advice

FREE impartial advice on choo ing the right computer is bei offered to visitors at next week Which Computer? Show by th National Computing Centre at the UK's only independent univer sity, the University College Buckingham. The exhibition is Birmingham's National Exhibitio Centre from January 18 to 21.

■ Preview of show – pag 14/15.

GOULD . . . "Commodore will double its chip-making capacity."

Commodore, Zilog sign exchange deal

by Robert Parry

US MICROCOMPUTER maker Commodore, with production limited by chip processing capacity at its own chip shop MOS Technology, has signed up struggling chip maker Zilog to help it out.

The definite agreement sealed last week involves an exchange of technology between Commodore and Zilog. Commodore is licensed to manufacture the 16-bit Z8000 processor and associated peripheral circuits for use in its own micros, while Zilog gets mask sets and manufacturing rights to selected custom circuits for present and future Commodore machines.

Zilog will build these components exclusively for Commodore.

According to Commodore chairman Irving Gould, the "significant financial involvements" between Commodore and Zilog are intended to give Commodore the circuits it needs and to reduce the time to bring in more manufacturing capacity.

He adds that Commodore will also be doubling chip making capacity at its MOS Technology plant this year.

As well as easing Commodore's acute lack of chips, the pact will do good things for Zilog. It will take up much of the company's spare capacity, and will give the Z8000 a welcome helping hand in the market. Few large volume micro manufacturers have opted for the Z8000.

The deal should also do much to improve Zilog's unhealthy finances. President Franc de Weeger was taken on eight months ago to turn the Exxon subsidary round.

He went aboard as a Mr Fixit to take Zilog out of the doldrums, and was given until 1984 to make it profitable. It is still by no means certain that he will be able to do this, though the Commodore deal will give a big boost to his chances.

Commodore by taking on the Z8000, still a tail-ender in the 16-bit microprocessor field, has shut the door on the development of its own in-house designed 65002, hit by MOS Technology's loss of three key designers last year.

Until now Commodore has relied on processors from MOS Technology – the 6502 used by chip designer Chuck Peddle in the Pet he brought to Commodore, and the 6509 and 6510 developments of this chip used in its newer machines.

Plessey bids for satellite rights

by Donald Kennett

PLESSEY has teamed up with the US communications equipment company Scientific Atlanta to gain manufacturing and marketing rights to equipment for the forthcoming European markets in satellite and cable television services.

Plessey has previously gained access to US-designed systems by licensing a digital private telephone exchange from Rolm and by buying Astrodata for its telex exchanges and Stromberg-Carlson for its public digital telephone exchanges.

The agreement with Scientific Atlanta puts a previous agreement between Scientific Atlanta and Mitel in an uncertain light. The earlier agreement was to design and market a range of systems which would combine its satellite receiving stations with Mitel's data and telephone switching systems.

Plessey and Mitel are rivals in the switching business. A Mitel spokesman said it would be two weeks before the company knew what the position was. Mitel had already set up a prototype system incorporating equipment from both companies, he added.

Mitel is no stranger to agreements involving rivals. Last year it signed agreements with both ICL and IBM.

Plessey is taking no chances on the future of its agreement. The joint venture company will be owned 51% by Plessey and 49% by Scientific Atlanta.

Plessey also intends to buy approximately 13% of Scientific Atlanta and will be entitled to put two directors on the board when it has done so. It has a further option to buy no more than 30% of the company over the next 18 months.

Under a separate agreement Scientific Atlanta gains access to Plessey's work in optical fibre components, microwave devices and VLSI (very large scale integrated) chips. Both companies believe this will benefit their new joint venture company.

The chairman of the two companies, Sir John Clark of Plessey and Sidney Topol of Scientific Atlanta, agreed that Plessey's significant investment in Scientific Atlanta would "solidify their common interests in other product development and marketing programmes".

Scientific Atlanta was founded in 1951 by six engineers to produce and market high-frequency antennae. It has grown to sales of $337 million last year, more than 60% of which was from communications activities, and it has a major share of the US commercial earth station market.

It has recently developed a series of small earth stations for mini cable systems in apartment houses, hotels, hospitals and businesses.

Economist accused of US computer swindle

by Howard Karten

A FORMER federal reserve board economist was charged last week with fraud in connection with the unauthorised access to a federal computer.

Theodore Langevin allegedly used the password of another government employee to access the computer on November 22, his first day as a money market analyst with New York brokerage E. F. Hutton Group, and just three days following his last day as a federal employee.

Langevin had used the Reserve Board's computer in the course of his work analysing the impact of federal money supply policies on the economy. Access to that data would have given Hutton a significant business edge over the competition.

Some reports circulating at the weekend suggested that the government had detected Langevin's attempts at entry in part by tracing a phone call he made to the computer, and by entering false data for Langevin to find.

Micro ticket system will cut rail queues

by John Riley

RAILWAY ticket queues will get shorter when a new microelectronic ticket issuing system is installed, claims British Rail. The system, being built by Thorn-EMI around Intel 80/85 microprocessors at a cost of £21 million, will be phased in between mid-1984 and mid-1986.

There are two parts to the system. Every station booking office will eventually have an all-purpose ticket issuing system (Aptis) which will cost £17 million. A further £4 million will be spent on a portable battery operated version which will be used by guards on pay trains.

The keynote is the compactness of the system. Aptis, which is built around three Intel 80/85 microprocessors, is about the size of a small suitcase. The main processor has 74 Kbytes memory split into 56 Kbytes EPROM and 18 Kbytes RAM. Another processor, with 256 Kbytes RAM, manages the database, storing station names and fares, and the third processor handles communications and housekeeping.

Aptis interfaces to BR's main computer in Nottingham for down line loading, and there are other interfaces, for example to BR's seat and sleeper reservation system. There is also an interface dedicated to reading credit cards.

The portable version, Portis, which has dimensions of 270 × 230 × 100 millimetres, is based on one 80/85 microprocessor with a directly addressable 64 Kbytes store. Weight is saved by a smaller keyboard, absence of a magnetic data capture drive, and by a thermal rather than an impact matrix printer.

British Rail will use micros to cut train ticket queues.

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ICL

Future-proof micro 'will last at least 10 years'

by Robert Parry

A BRITISH amalgam of micro dealer and R&D consultants reckons it has jumped the gun on US and Japanese microcomputer designers. Tycom Corp claims to be a year ahead of its competitors with Microframe, a microcomputer billed as "future-proof", being designed to last at least 10 years and run with the whole range of available processors.

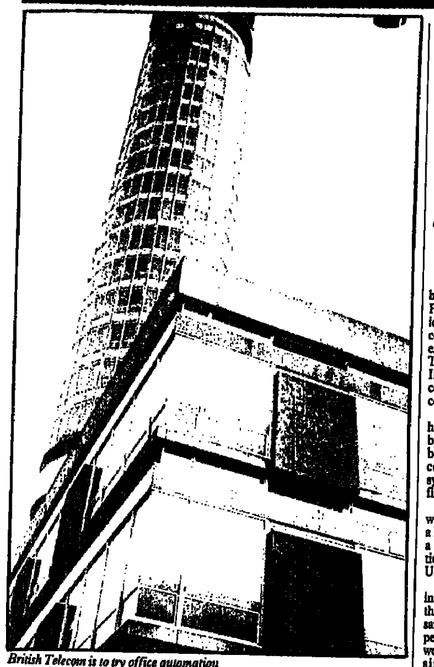
In its year's lead, Tycom aims to sell 10,000 machines, mostly into the top UK companies and OEMs, and through a dealer network to end users.

The machine is based around Tycom's home-designed bus controlled by an Intel 8088, on to which users can hang various processor boards to run application software. The philosophy, says managing director Allen Timpany, is to make processing a peripheral task.

TIMPANY . . . Processing a peripheral task.

By investing R&D effort in the hardware and central systems software, Tycom has built a framework allowing simple and fast implementation of new user operating systems, new processors – running concurrently if wished – and new peripherals.

But a machine that will last 10 years without becoming obsolete needs a company behind it that will last 10 years – and be seen now as likely to last 10 years.



British Telecom is to try office automation

IT Minister lines up seven more office automation trials

by Donald Kennett

A FURTHER seven office automation trials have been lined up under the Department of Industry's sponsored scheme, bringing the number so far to 19 out of a planned total of 22.

Under the scheme, which was announced last year, the DoI is giving £250,000 each to public sector organisations implementing advanced systems which they expect to benefit from but which they cannot currently cost-justify.

Announcing this batch of seven, Information Technology Minister Kenneth Baker said: "In due course the experience gained will provide other new users with unbiased practical examples of introducing electronic ways of working.

"For the industry, these pilot projects provide a realistic proving ground for advanced technology and an endorsement of the public sector's belief in office automation."

The scheme had been extended to 22 trials from an original eight, he added.

The mechanism for sharing the experience gained during the trials will be a two-year evaluation of all of them by the Economist Intelligence Unit.

The systems are all applicable generally and designed to bring together functions such as word processing, electronic filing and retrieval, advanced graphics, viewdata and telecommunications, personal computing and electronic mail.

The latest trials involve Burroughs at the CEGB, Aregon at British Gas, GEC Information Systems at the Export Credits Guarantee Department, Future Technology Systems at Leicestershire Police, Digital Equipment at British Telecom, Logica VTS at Wales Gas, and Philips Business Systems at the Department of Trade.

The previously announced trials involved Racal at the BBC personnel department, Hewlett-Packard at BBC Breakfast Television, ICL at the Science and Engineering Research Council, Data Recall also at SERC, IBM at Cambridgeshire County Council, Plessey Office Systems at Nottinghamshire County Council, Office Technology at British Rail Engineering, Xionics at the Cabinet Office, Rediffusion Computers at the Department of Industry IT division, Allied Business Systems at Brighton Health Authority, Honeywell at Strathclyde Regional Council and Rank Xerox at the GLC.

A requirement of equipment used in the trials was that it should be capable of supporting links to outside systems. The two Burroughs Offis I systems at the CEGB will be linked to ICL, IBM, Amdahl and Burroughs mainframes as well as to four or five different makes of word processor.

IBM looks for French partners to repel Japan

by Jack Gee

FRENCH computer and electronics firms are growing increasingly concerned about moves by IBM to expand its activities in France. They are particularly alarmed by IBM's efforts to win a major contract from the Ministry of Telecommunications.

PTT Minister Louis Mexandeau has set the cat among the pigeons by telling Parliament that IBM will be given the chance to present its computerised telephone billing system in competition with French firms.

CIT-Alcatel, Sintra and SESA, which have been asked to develop a French system, fear that ITT has a head start thanks to the installation of 60,000 of its systems in the US.

Explaining why IBM had been invited to put its own system through its paces, Mexandeau said, "In order to judge how competitive the French products are, we are undertaking a trial of a similar system developed by IBM."

IBM is moving into the limelight following a statement by senior vice-president Jacques Maisonrouge that the company, which has hitherto made a doctrine of opposing co-operation pacts with other firms, is ready to ally with French partners to repel Japan's industrial invasion of Europe.

As a foretaste of what it has in mind IBM is to set up a factory at Saint-Die, Eastern France, with Canada's Mitel, to manufacture private automatic branch exchanges.

Maisonrouge has listed components, telecommunications, satellites, telephone billing, databanks and distributed data processing as areas in which the corporation is ready to launch joint ventures.

Maisonrouge revealed IBM's new strategy to French journalists who were invited to the United States in what is regarded as a seduction campaign to improve the public image of the company in France.

The senior vice-president told his guests, "IBM is afraid of everybody and is constantly worried. I believe this is what makes us strong. We take note that we can no longer achieve everything on our own. Our financial possibilities are limited."

This remark about IBM's financial situation must have had a curious ring for the French visitors: The corporation made a net profit in 1982 of $3.3 billion – fourfold the turnover of France's limping computer leader, Cil Honeywell Bull.

Explaining IBM's eagerness to move into the French telecommunications market, Maisonrouge said "We cannot afford to stay out of this sector. Telecommunications and computer technologies converge on each other."

MAISONROUGE . . . Ready to launch joint ventures.

SALES BRIE

£2.5 million Tornado contract

BASE TEN Systems of Pre won a £2.5 million contract Panavia Aircraft in West Ger to develop and manufac systems which will control th lease of Sidewinder missiles Tornado combat aircraft.

It will deliver the system British Aerospace, which is main UK contractor.

Software for Ni

QUEST Genesys, the Lough rough-based software ho specialising in the construction dustry, has sold a suite of de programs to Fletcher Challeng New Zealand for use in the de of access roads on its forestry papermaking estates. The suite cludes the Random 1 model program, the Highways 1 calcu ing program and the Highwa drawing program.

100th sale

CAMBRIDGE Interact Systems has sold a £160,000 c puter aided design system to bro, the truck tipping gear m facturer. It was the compa 100th sale of its Medusa de package. The system runs o Prime mini and the order was w against competition from large companies.

Workstations

LASER-SCAN Laboratories Cambridge has won a £30,0 order to install four workstati and enhancements to an exist system at the British Ordna Survey headquarters in Southa ton. The order includes a Dig Equipment Vax 11/750 to u over the automatic digitisin system from the existing V 11/780 which holds the carto phic database.

Same again

BANKERS Automated Clear Services (BACS) has placed £12,000 repeat order with Ce eron Communications of Glasg for Barco 14-inch viewdata ter nals and Pussycat plain paper pri ters. The terminals and print are used by banks, in conjunct with BACS' Rediffusion viewd system, to handle queries ab automated transactions such salary payments and direct debi

$1m order

CABLE & WIRELESS h ordered over $1 million worth time division multiplexers fo General DataComm in the U They will be supplied to suppl the new telecommunications n work to be opened this year Mercury Communications, which Cable & Wireless has a 4 share. The Megamux multiplexe will share the network's 64Kbit per-second channels between d vices communicating synchro nously or synchronously at variety of data rates.

Exam system

THE Joint Matriculation Boa has ordered a Convergent Techn logies workstation from syste builder Technologic, whic bought it from Compute Tec nology, which buys them from US. The board sets GCE exami tions. It will use the system fo counting to handle fees fro schools and local authorities the board's services.

£100,000 order

GAS turbine and compres maker Cooper Energy Services installed a £100,000 NCR 9 machine. Cooper has its hea quarters in Texas and most of i 28 European sites are NCR user The 9040, with 512K of memor will be used for financial and bu ness systems, materials manag ment and critical path network

ICL gives users choice of supplier

by Andrew Thomas

ICL has turned away from its erstwhile subsidiary Control Dataset and given users a choice of supplier for ICL branded magnetic media. The mainframe manufacturer last week gave the go-ahead for Memorex to supply tapes and floppy discs bearing the ICL name.

Under the agreement Memorex will supply tapes certified at both 1600 and 6250 bpi in addition to several types of floppy disc. All media are to be manufactured at plants in Belgium and Ireland.

The deal brings to an end the monopoly enjoyed by Control Dataset, now a subsidiary of Control Data, and could mean a 50% increase in Memorex UK's media revenues.

But Control Dataset claims that the loss of sole-supplier status is not critical. The Stevenage-based company holds on to its hard disc business with ICL, the Memorex packs submitted for testing by ICL technicians at Kidsgrove failing to gain approval.

A Control Dataset spokesman said, "Memorex is not supplying hard discs with the ICL name, and that accounts for well over 50% of the ICL brand market."

Control Dataset also retains ICL approval for magnetic tapes. ICL's thinking behind the double-sourcing is to extend the worldwide coverage of the ICL name, as well as giving more choice to customers, according to an ICL spokesman.

Edward Picken, media sales manager for Memorex, sees the ICL deal as significant: "Our annual revenue from media sales is around £6 million, and we might well be looking at our revenues increasing by 50%. There's enough in the cake, ICL having over 40% of the UK market, for both Control Dataset and ourselves."

Control Dataset started life as a subsidiary of ICL, and in 1976 was merged with Control Data, CD holding 75% of the shares to ICL's 25%. In 1979 Control Data bought out the ICL holding, and since then Control Dataset has traded as a subsidiary of Control Data, its 160 staff being based in Stevenage, Birmingham and Hounslow. Magnetic media are produced at Control Data's Brynmawr plant in South Wales.

Legal advice on data privacy

by George Black

DATA processing departments may have to take sensitive personal information out of their systems as a result of forthcoming privacy legislation. A new company set up to issue certificates of compliance with the data protection law says reverting to clerical systems may be the answer for firms whose personnel records would fall foul of the law if kept on a computer.

The firm is Londinium Data Protection, established by two British Computer Society members Kenneth Wilder and Joseph Kenny, with legal guidance from Philip Newman, a barrister.

Wilder said: "We shall recommend to most companies that personal data is collected from the subjects themselves and that the files are opened to the subjects for checking. That is likely to be the easiest way to limit complaints.

"But in cases where management do not want employees to see sensitive reports on themselves, we could recommend that the information is stored somewhere else, not on the computer."

Londinium is offering to make a survey of any organisation, at an initial cost of £1,000, to see if its handling of personal data accords with the requirements of the Bill. Wilder admitted that they had no definite clients as yet, but pointed out that it was "early days" as few had got round to reading the details of the proposed law.

After the survey the company will report on its findings in general and estimate the cost of a full investigation with recommendations. The final cost of the service will be related to the amount of personal data stored and its value to the company as a whole.

A certificate of compliance might, for example, cost a further £1,500 to a firm with about 1,000 employees.

Wilder stressed that security checks would form an important part of the service. "We will recommend that personal files are open to the individual concerned – but at the same time it is equally vital that no-one else should have access to them," he said.

In the event of a certified firm being prosecuted for noncompliance, LDP is insured through Bowring Professional Indemnity at Lloyd's of London.

Certificates will be valid for a year, in which time LDP intends to make at least one spot-check to confirm that compliance is being maintained.

SKINNER . . . "We will run along with the shirt-tails of IBM when it brings the PC in."

First UK-built PC look-alike

by Robert Parry

THE first British-built IBM Personal Computer look-alike is to be unveiled next week. Egham-based Computer Ancillaries is adding a twin processor machine to its eight-bit micro range to take on IBM and DEC.

Already CAL has orders for 2,000 machines from Computer Access and Peripherals, which will be the sole distributor for the micro into the dealer network. These machines will be delivered from late March.

Before that CAL will be pushing the machine through its own sales force, and so far has 40 orders into existing users of its Caltext word processing equipment.

"The micro looks the same as the IBM PC, but is British built, has eight-bit and 16-bit processors on the same board, and will be multi-user from day one," says CAL managing director Ian Skinner. The system recognises whether it has eight or 16-bit applications, and will run CP/M, CP/M-86, MS-DOS or MicroCobol software.

"It has lots of software available now," says Skinner. "You won't have to wait for it." The micro runs programs written for the IBM PC – as long as it is entirely standard CP/M-86 or MS-DOS software without any extra tweaks, he adds.

IBM clones are coming out of the US and Japan by the handful, ready to take a part of the action stirred up by IBM's entry into the personal computer market. Most of them claim to offer more for less money.

The minimum specification model comes with a Z80B/8088 twin CPU's, 128K of RAM and two 400K floppy drives. MS-DOS and CP/M are standard operating systems included in the £1,995 price tag – which Skinner reckons compares well with the expected £3,000 for the IBM PC when that arrives here officially.

"We will run along with the shirt-tails of IBM when it brings the PC in," says Skinner, "and we've already had a lot of interest from grey importers of the IBM PC. But I really see the competition more as the twin processor DEC Rainbow." (The Rainbow also uses Z80 and 8088 processors, with CP/M and CP/M-86 capability.)

The processor boards for the CAL machine are built by LSI Computers in Woking – a link Skinner plays down.

Database puts engineering firms in touch with buyers

by John Riley

SMALL precision engineering firms are to be linked up via a computer database with industrial buyers searching for specific manufacturing capacity. The scheme was launched last week by the London Enterprise Agency (LEntA) which was set up in 1979 with the sponsorship of nine major companies to help protect and create employment in London.

Ray Cobbett, senior marketing adviser of LEntA, explained: "We picked the precision engineering sector as it is important but heavily import penetrated. Market research carried out for us found this sector to be a passive marketplace. Few engineering companies had sales skills to market aggressively and buyers tended to stay with the devils they knew."

As a result of these findings Unilever UCSL of Watford approached LEntA and subsequently developed its Suppliers Identification System (SIS) an information retrieval system which runs on Unilever's NAS/5000 mainframe.

"We were interested because of our emerging and ever-growing commitment to information technology," explained Andrew Egan, Unilever UCSL's manager of information products.

SIS manages data relating to the capacity, customer base, facilities, etc, of each engineering company, and the coding system is based on BEC standard decimal coding enabling foreign buyers to interrogate the system in their own language.

A £30,000 pilot project, financed largely by Unilever and the National Westminster Bank, is currently being set up and will involve a representative sample comprising 250 London-based companies.

How Japanese do it

by John Riley

THE EEC is looking for 30 young European executives to help remedy the Japanese trade deficit in the long term.

The 30, of whom about six are likely to be from Britain, will be seconded from their companies and sent to Japan for an intensive 18-month language and business training course. All expenses will be borne by the EEC, as well as an allowance of about £1,275 per month for each participant.

This is the fourth such scheme, and the short list, which has to be ready by mid-February, is being drawn up by management consultants Peat, Marwick & Mitchell. No one branch of industry will be especially favoured, and the EEC's aim is to get a good balance.

"Companies should look upon this as a medium-term investment," said Colin Shannon, one of PMM's partners. "The long term aim is to eliminate the middleman and reduce the paperwork and to provide companies with a good entree not only into the business but also to the official line of the Japanese."

£190 award for inadequate back-up

by George Black

DAMAGES of £190 and court costs were awarded against a Torquay firm for failing to provide adequate back-up service for computer equipment.

The county court case is unusual and could set an important precedent because the decision overruled a disclaimer clause in the contract absolving the suppliers from any consequential losses. The Registrar found that this clause was invalid.

Systems of Torquay was ordered to make the payment to Homeline of London, the "alternative" estate agency. But the amount demanded by Homeline was halved by the court because it found that Homeline had compounded the loss by its own delay.

Homeline had bought Apple computer equipment from the defendants, who also provided a service agreement. When the system went wrong in May 1982, the SBCG engineer put the fault down to the software. Homeline's Tony Pearce told the court. But when he went down to Torquay from London he quickly traced the problem to a plug which had become disconnected from its disc drive card, Pearce said. "It was a simple and obvious fault which they should have found."

For the defendants, a spokesman said they did not feel the outcome was fair. "We asked for a listing to be produced, but were told that it could not be as it was a confidential document and anyway irrelevant. We still think it was more likely to be a soft fault than a hardware one."

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Perhaps these down to earth, practical virtues are simply what you'd expect of Saabs, but their combination of performance and economy may well surprise you. To take just one example, the GLi, second only to the 122 mph Turbo in performance, returns an economical, financial-director-pleasing 38.6 mpg.

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US Defence to test 'smart card'

by Jack Gee

THE US Defence Department begins a test this month of a "smart card."

The card was developed by Philips Data Systems of France during a large-scale trial to evaluate a possible replacement for the old-fashioned paper identification card.

The Philips card uses a microprocessor to give it memory and intelligence. It is the only memory card in the trial, in which its competitors are a conventional magnetic stripe card, supplied by several American manufacturers, and an infra-red fingerprint recognition card made by Interlock of West Germany.

The test is being undertaken in the framework of the real time automated personal identification card system (Rapids) which has been mandated by the US Congress to end fraud, waste and abuse of identification cards used at present by the nation's seven uniformed services.

Michel Gallet, head of marketing for Philips' smart card ventures, said at the firm's Paris headquarters: "The memory card offers security of access via a microprocessor which is programmed to handle both the rules for use of the card and those for communicating with its various parts."

Testing of the smart card and its rivals will start at four military bases, aboard a Navy ship and at a military enlistment processing centre. Final evaluation and recommendations are expected to be made by the Pentagon in September.

Roy Bright, managing director of Intelmatique, the French telecommunications authority's export promotional arm, said: "The choice by the Americans of the smart card to take part in the test confirms that this technology can be adapted to a multitude of applications."

The smart card is currently being tested as a point-of-sale cheque and cash replacement device in three French cities, Lyon, Caen and Blois, in a home electronic fund transfer venture at Velizy, near Paris, and will be introduced this year for payment of calls from telephone booths.

About 2,000 of the Philips cards are being used in the Rapids programme. They will be distributed at the US Army's Fort Lee at Petersburg, Virginia.

Some of the electronic readers will be online to a central database, others will be connected to a local database, and some will simply verify the eligibility of the card at the point of entry or at a point of sale.

Waste and fraud through the use of lost, stolen or forged identification cards are estimated to cost the US taxpayer between $60,000 and $100,000 a year. Much of the swindling involves money earmarked for the military medical care programme.

Full implementation of the tamper-proof, computerised identification card system would require an initial order of between five and seven million cards with annual supplies thereafter of two to three million.

The Department of Defence would also need thousands of electronic card readers at military hospitals, post exchange stores and base personnel offices. Philips says it is geared to deliver these.

BRIGHT . . . "US choice attests variety of applications."

KEMP (left) and WINDER . . . "Dual ground working gives a more user friendly environment".

Operating system gives dual ground working

by John Riley

GEMINI – the heavenly twins – is the name given to Wordplex's new operating system, launched last week with the new 80-4 word processor.

The key feature of Gemini is its dual ground working which enables two applications to be run concurrently on the same machine. Previously Wordplex used two operating systems, one for standalone products, the other for shared resources.

Gemini, intended for all Wordplex products, Richard Kemp, general manager of Wordplex UK commented: "The dual ground working creates a more user friendly environment."

The 80-4 incorporates a 10Mbyte sealed Winchester disc and a 500 Kbyte floppy diskette for transferable storage. The cost of the total system including software is £9,750 and it is available from this month. Existing 80-3 users can upgrade on-site to the Gemini system at £1,750.

Roger Winder, director of marketing UK pointed out, "This is not a standalone, but the first of a new cluster of systems. The dual ground working allows the operator to flip to different applications at the press of a button.

"For example, it is possible to change over in mid-sentence from word-processing to sending a telex or consulting viewdata, and all the information can be recorded in the same Gemini format no matter where it comes from."

With Gemini, the Wordplex character set will be extended to 255 characters, and data will be transferable between systems in different countries.

Attention has been paid to comfort and ease of use. "We have done everything to make it ergonomically acceptable."

We will be hearing more from Wordplex this year, Kemp said. "We are currently looking at managerial/secretary terminals, and the dual ground facility is important for this. We will be talking more about manager/secretary terminals soon."

Viewdata marketing test starts

by Donald Kennett

THE West Midlands viewdata trial, a carefully planned test marketing exercise to discover what will make Prestel take off in the residential market, is now running. It is being run by the Birmingham Post & Mail's Viewtel viewdata subsidiary and supported by the Department of Industry.

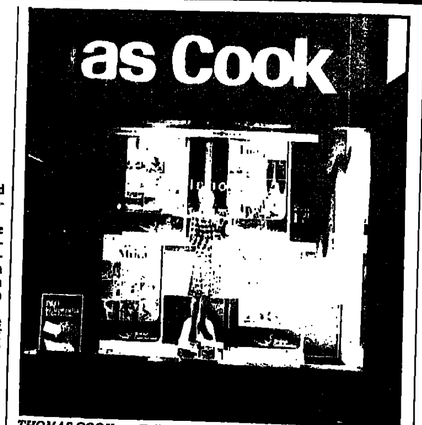
The trial will run from this month to October in three communities around Birmingham: Solihull, Edgbaston and Sutton Coldfield. The first 100 subscribers, to be recruited in January, will be pestered thoroughly to make sure the service package is in reasonable shape before unleashing it on the rest of the target audience of 2,500 in March.

The package is based on a new database on Prestel called Club 403 (because it starts on Prestel page 403 and has some of its pages restricted to its subscribers). This database consists mostly of information available elsewhere on Prestel, put together so that it is easier to find your way around it.

It is supplemented by local information and news, including new books available at the library and a list of doctors, dentists and chemists.

The rest of the package is to do with how the trial will be marketed and supported. Subscribers will pay a fixed £4 a month instead of the Prestel time charge and although all the Club 403 information will be free, they will still have to pay for information that is charged for elsewhere on Prestel and for the telephone call they make to reach the service.

The price of a 22in viewdata television has been fixed at £16 a month, £3 more than the equivalent teletext set, and many of the 2,500 users are expected to be recruited from existing teletext users, who currently number nearly 750,000 in the UK.



THOMAS COOK . . . Fully automated travel agency branches.

Biggest travel agency orders 300 financial terminals from NCR

by John Kavanagh

THOMAS COOK has kept its lead as the UK's most automated travel agency with an order for 300 NCR 2262 financial terminals as the first step in the complete overhaul of its foreign exchange network.

The order is for terminals for 74 of the company's 200-plus high street travel agencies. And NCR looks set for an orders bonanza from the world's biggest travel agency: Thomas Cook is considering putting 2262s in other branches, not only in the UK but worldwide.

Initially the terminals will run as local branch networks, handling exchange transactions, working out currency amounts, preparing cheques and drafts in different currencies and recording the issue and cashing of travellers' cheques. Cashiers will be able to use any terminal in a branch to see the overall trading position and stocks of currencies for the branch. At the end of the day trading information will be sent as written reports to Thomas Cook's administrative centre in Peterborough for processing on a TI minicomputer.

But Thomas Cook is also working on a nationwide network linking its branches and computers in a private voice, data and viewdata system.

The company has two Systems Designers viewdata systems, based on Digital Equipment PDP-11 minicomputers. One front-ends an IBM mainframe to enable Thomas Cook branches and other travel agents to make online holiday bookings. The other is restricted to Thomas Cook staff and provides information such as details of special offers and visa requirements. Some branches are also linked to the Travicom airline booking network.

Over the next few years all these systems will be linked over the private network.

Retail automation training manager Bernie McDonnall said the NCR 2262s would replace equipment supplied by Software Sciences in the early Seventies. These now needed a lot of maintenance.

Non-French speakers can't export to France

by John Riley

MEASURES adopted in France, which will enforce the use of the French language in all import transactions, could make life harder for British software and hardware exporters.

Just before Christmas the EEC Commission demanded a guarantee within 10 days that these new rules be withdrawn on the grounds that they are protectionist, placing other EEC exporters at a disadvantage with extra translating costs.

The French reply last week gave no such undertaking, so a prosecution in the European Court under Article 30 (obstacle to trade) is now likely to be initiated within weeks. A verdict is expected within three months of this.

The text of the measures, agreed by the French Council of Ministers, reads: "The use of the French language is compulsory in transactions, proposals for transactions and imports concerning all goods and services."

It goes on to expand this in detail: "Use of the French language is obligatory for all transaction documents (contracts, labelling, catalogues, prospectuses, order forms, delivery notes, guarantees, user instructions, insurance certificates, transit documents, etc) as well as for the writing on the packaging and on the goods themselves and for written and spoken publicity."

A spokesman for Rair France foresees problems for low-volume exporters of diverse products, especially those without a French base, who would be hardest hit.

He added: "First level user instructions are generally in French, but some technical manuals are in English. For example, although the CP/M manual is translated into French, the error messages and explanations are in English. Also Cobol and Basic are English programming languages. We are not sure how far the authorities will go in enforcing these measures."

British exporters of computer products to France who have been contacted have not experienced any problems so far, but they could be hit hard if the French law were applied in full force.

A French embassy spokesman said: "The Customs are applying spot checks, but the measures are not being seriously applied. We have had no complaints so far." A spokesman for the Department of Trade commented: "They are being lenient on European countries."

In Britain, SITPRO (Simplification of International Trade Procedures Board) recommends that all invoices for France should be in French.

Free tickets offer for all-star soccer

by Robert Parry

COMPUTER games front runner Atari is sponsoring a football competition this month – with real people kicking actual balls. And Atari is giving away 60 tickets to Computer Weekly readers.

Eight football teams will compete over two days for the Atari Soccer Six trophy, in a national six-a-side indoor football championship organised by the Football League. Teams taking part are Arsenal, Birmingham City, Everton, Ipswich, Manchester City, Nottingham Forest, Southampton and Swansea.

The first 30 people to write in to Computer Weekly will each get a pair of tickets for the competition, which will be held in the Birmingham International Exhibition Centre on the evenings of January 25 and 26 (state preference). Kick off is at 7.00 each evening, and the fun and games should be over by 10.15.

Atari UK managing director Graham Clark sees Soccer Six as the indoor game of the future and is glad to sponsor the event. "Atari products are family fun," he says, "and so is Soccer Six."

Just in case the football is not enough fun, there will be numerous Atari computer games outside to get your hands on.

Personal boost for floppy drives

by George Black

PERSONAL computer users will push the floppy disc drive industry over half a billion pounds in value by 1986, says a new report from the Venture Development Corp in Massachusetts. This would mean a growth rate of nearly 29% a year.

But at the same time more users in the word processing and industrial systems areas are going over to hard discs.

PC users accounted for 41% of all floppy disc drives shipped in 1981. The 5¼-inch single-sided type were the most popular, outselling the nearest rival by almost two to one last year. But next year the double-sided version is expected to become the favourite.

Crucial factors will be the impact of the half-height drive and the micro floppy drive, of which several types are now competing.

Sizewell software

■ From front page

can be called up if the first fails. But objectors say this cannot be guaranteed as the software will not be completed for up to eight years.

If the "B" reactor is allowed to be built next to the present gas-cooled "A" plant it may lead to other PWRs in the UK. Yet in the US no new reactors have been approved for four years.

The CEGB has already spent about £30 million preparing the site, which could rise to £100 million next year.

The inquiry at The Maltings, in the Suffolk village of Snape, will centre on the economic viability of the plan. The CEGB, however, may find it has to fight equally hard on the safety front. The government will be happy for the inquiry to drag on so it can put off deciding until after the election.

■ Westinghouse's Bruce Cook claimed that their concept was fully tested and that another software-based approach had been successfully installed by Combustion Engineering at Arkansas. His company had similar plans for Japan and Italy. "I've put several years of my best efforts into this and I believe it to be absolutely safe," he said.

SOFTWARE FILE

Canadian push to make 'piracy' theft

SOFTWARE piracy could become a crime in Canada if a Private Member's Bill is passed into law. Unauthorised copying of computer information would be treated as a form of theft by an extension of the criminal code's definition of the word "property". It is also proposed to make printouts acceptable as evidence and to make unauthorised tampering with data a punishable offence.

Although these ideas are unlikely to be accepted in the form of a Private Member's Bill, they may influence the plans of the Canadian federal justice department which is preparing its own Bill on the subject for publication in March.

Lippiatt.

New collection

A COMPLETE micro software environment is now being marketed by a new firm based in Knebworth, Hertfordshire, called Camelot Software & Systems. The collection of packages is centred on the Digital Equipment's LSI-11, PDP-11 and VAX machines. First products available include cross-assemblers, linkers, librarians and simulators for eight-bit and 16-bit microprocessors. Camelot has been set up by Arthur Lippiatt, formerly technical director of Cambridge Micro Computers. The programs come from US firm Cymric Computer Systems.

Trumps for Ace

PACKAGE Programs' fourth-generation asset management system Ace is to be launched in North America. Stewart O'Malley, recently appointed general manager of PPL's overseas division, has been across the Atlantic setting up talks with a big US software supplier to take on the package. Ace, which runs on a range of mainframes and large minis, has gained about 40 UK users in the last three years.

Turnover up 154%

MAIDENHEAD systems builder Micro Scope recorded a massive jump of 154% in turnover to £1,140,000 from £449,000. Profits on the year ending October 1982 were up to £111,400 before tax, a 500% increase. The company supplies reservation and accounting systems for the travel and holiday industry. Some 12% of UK holidaymakers are booked through the Micro Space system, which has been installed in over 20 companies. The Videogate system is used by Thomson Holidays, and the firm has also had success with its Scriptcounter pharmacy label printer.

High-res graphics

A BIT-MAPPED high resolution graphics package is soon to be offered on Bleasdale's BDC680 supermicro, running under the Unix operating system. The machine is based on the Motorola 68000 chip and is claimed to have the power of a DEC PDP-11/70 mini. The product is being marketed by Advanced Microsystems of Milton Keynes, which is run by two ex-Manchester University computer scientists.

Logica set for Unix campaign

by George Black

LOGICA began the New Year by leaping on the Unix bandwagon. This week it announced a new deal with Microsoft as well as a plan to push a Canadian emulator for DEC equipment.

The Unix emulator for Digital Equipment's VAX range of minicomputers runs concurrently with DEC's own Virtual Memory operating system VMS. And another operating system currently in preparation will enable Unix to be run in the VAX native mode.

The emulator, called Unity, was written by Human Computing Resources of Toronto and is to be marketed by the leading British software house Logica.

Until now VAX users have been prevented from getting the benefits of Unix by high prices or because of restrictions in the products on offer.

The £42 million a year company has just signed an agreement with the American Microsoft to strengthen their joint hold on the fast-expanding world market for Unix and its derivatives.

Adrian King, of Logica's software products group, says that Unity gives the full 32-bit virtual memory system without any alterations being needed to VMS, at a cost between £5,000 and £6,000.

Under the new agreement Logica becomes second source in Europe for Microsoft's Xenix, the Unix multi-user emulator which Logica previously distributed on the DEC PDP-11 minis. Xenix incorporates many features of Unix System III, which was aimed at the DEC range exclusively, and, Logica and Microsoft claim, a number of improvements too.

Most popular Unix system up to now has been system 7, with a new version, number 5, upwards compatible with version 3, being released this year. But the owner of Unix Bell Labs, supplies it only for the DECs, not for the 16-bit micros.

Microsoft will take responsibility for Xenix enhancements and compatibility with its MS-DOS operating system, which is already on IBM's Personal Computer and some 50 other micros. A new version, MS-DOS2, has recently been announced.

Logica will continue to support the PDP-11 version as well as porting it to the up-and-coming range of machines based on Motorola's 68000-chip.

"The main advantage of the agreement will be that European clients will avoid inconvenience of having to deal with Microsoft directly in Seattle," said Gordon Kirk, director of the software products group.

He predicted that Xenix would become a standard by the end of 1983 on 16-bit machines, being used both as an on-top system in conjunction with Pick for example, and in native mode.

Sales both to personal computer users and to systems developers would boom dramatically in the next 18 months, he forecast, and in this period a basis would be established for all the developments of the next seven to eight years, he said.

In the US growth is envisaged by mid-1984 to 300,000 shipments of Unix and its lookalikes with a total market value of $5,000 million.

Adrian King said Xenix would probably exist in eight to 10 68000-chip versions by the middle of 1983. The French Ministry of Technology had now belatedly given approval to the Unix operating system, he said, and rapid expansion was therefore likely on that front.

KING . . . "Ten 68000-chip versions by mid-1983."

Service firms snap up grants

by John Riley

COMPUTER service companies are increasingly taking advantage of government grants to train their own entry-level programming and systems staff.

This trend is illustrated by the snowballing support for the voluntary computer services industry training board, Cosit, which acts as a broker between the Manpower Services Commission and the computer service industries.

Cosit's 1982-3 allocation of £140,000 to fund training has all been taken up, and it is, according to its organiser, Gordon Ewan, about to receive a supplement of £90,000. So far 43 companies have joined Cosit and Ewan expects this figure to rise to 100 by March.

Cosit can provide up to £100 a week to companies for each trainee. Support is not limited to entry-level staff, and Cosit can arrange grants for advanced training within companies, for example, if an applications programmer wanted to work on TP monitors.

Ewan agrees that companies that are thinking about training feel vulnerable to poaching as soon as their trainees become productive. "I have heard it said that it would be a lot easier all round if there was a transfer fee in the industry," he said. "However, we do find that computer companies that do their own training get a commitment and identity from their staff not achieved by bought-in staff."

Despite its role in bringing MSC and computing industries together, Cosit's operating costs are not met by the MSC, the Department of Industry, or by any of the IT schemes.

DBMS for micros set to soar

by George Black

FIERCE competition is foreseen in the rapidly growing micro database software package field, according to a new American report. Major contenders will be Ashton-Tate, Micro Data Base Systems, MicroPro International and Software Publishing Corp, says International Resource Development, the Connecticut consultants.

Micro DBMS software revenue is predicted to rise from $72 million this year to $3,700 million by 1991 – not far short of the $4,400 million expected for minis and superminis. In that time mainframe DBMS software will have increased from $1,100 to $10,200 million, forecasts IRD.

The trend is seen towards free-form data, with future developments including systems to handle "stream-of-consciousness" information – recorded phone conversations and graphics from facsimile transmissions.

Copyright victory in Japan

COPYRIGHT on software has been recognised for the first time by a Japanese court, although the amount of compensation paid was only about £200. ING Enterprises was ordered to pay this to Taito by the Tokyo district court for violation of rights to computer games.

Taito had demanded £750 for the infringement of its rights to programs on the Space Invader Part II machines which it produced and sold or rented. The court found that ING had illegally copied and used the programs. Taito was claiming about £7 on each of 100 machines on which ING was alleged to have used its programs.

BOS/5 for TI

THE new business systems range of Texas Instruments is to use the BOS/5 operating system from MicroProducts Software of London.

Savings on software services

by George Black

USERS can have access to a range of software services by payment of an annual subscription, under a new scheme just set up by Burolink of Brighton. The advantages they claim are that it makes available free telephone advice and that experts can be called out for short periods, instead of being taken on in advance for weeks or months, often unnecessarily.

"Users can overreact to a problem," said a Burolink spokesman. "They hire consultants for long periods, then find out they were not needed for all that time. The new idea will be much more cost-effective for some companies."

Annual subscription fee is £2,500 and on-site support, which can be obtained at 24 hours' notice, is charged at £30 an hour, mileage being added. Without payment of the annual fee, on-site advice costs £40 an hour, plus £20 an hour for travelling time as well as expenses.

'Tell us what's wrong with Tops'

by John Riley

THE Manpower Services Commission is to go to the computer industry to find out what is wrong with its Tops courses.

Stung by criticism of the computer Tops courses, the Commission is asking for complaints and suggestions to give it a pointer on how to put the courses on the right track. It has set up a group of industry representatives and MSC staff to organise changes to the training.

Hugh Sharp, MSC's head of computer training, said: "Each year the MSC spends about £21 million to support computer training for about 7,500 people, and of this, £16½ million goes to Tops training courses.

"We are concerned that the Tops scheme may be less effective than it ought to be, so we want to identify criticisms of the Tops courses to remedy this and to promote confidence in them with industry."

The first meeting of the group was held at the beginning of this month, and MSC staff are now meeting people, and collecting views.

The aspects to be considered by the group at its next meeting in February will be the kind of jobs for which the MSC is training people, the skills that the jobs require, the demand for those skills, whether Tops courses provide these skills, and whether Tops produces the right people in the right place at the right time.

While MSC staff are going actively to the computer world, Sharp is also keen for the computer world to go to the MSC with its views as soon as possible. He is therefore urging computer employers to contact his office in Sheffield on: (0742) 753275.

The combination of approaches is intended to ensure that employers needs can be comprehensively and correctly identified, and to provide increased clarification of the most effective mechanisms for keeping training approaches in line with the changing needs of employers in the future.

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COMPANY NEWS

SINCLAIR . . . . Soon to be a multi-millionaire?

Clive Sinclair set to enter his own golden age

WHILE millionaireship hovers 18 months beyond Robb Wilmot's grasp (See "Millionaire's Chances," this page), his erstwhile business pal Clive Sinclair looks set to become a multi-millionaire shortly.

Last week, under the auspices of that most august of City establishments, bankers N. M. Rothschild, Sinclair presented a select group of investors with a preview of prospects for Sinclair Research over the next few years.

Precisely what the computer industry's number one entrepreneur told the men from the City is a closely guarded secret – but that has not stopped the speculation.

What is not denied by the company is that negotiation for a private placing of about 10% of the shares in Sinclair Research is underway with N. M. Rothschild acting for Sinclair.

According to Sinclair Research, Clive Sinclair is currently the owner of all the shares in the company, with the exception of 5% which are held by a personal friend of his.

A private placing means that the shares are not offered to the public, but to institutions like banks, stockbrokers and rich private clients of City institutions. It usually, though not necessarily, precedes a public offer of shares and has the advantage of helping to set a price for the eventual public offer.

Among the finance men there are three figures being suggested for Sinclair's 10%. All are goodly sums, enough to make Clive Sinclair richer than even Jobs and Wozniak of Apple ever were.

The more cautious say that Rothschild has suggested a figure of £5 million. The next most popular guess is £10 million and finally there is the Financial Times figure of £20 million.

This last figure, which is the most widely tipped, values the company, and by extension Clive Sinclair, at £190 million.

In the year to March Sinclair Research, which is three years old, had turnover of £27 million and profits, pre-tax, of £10 million.

No profit forecast is made for this year but the company says that turnover should be around £50 million.

That figure implies profits of £18 to £20 million and a factor of 10 times annual profits as a valuation for a company is normal.

The market valuation of ICL – that is the number of shares multiplied by the current Stock Exchange price – is around £200 million, just below 10 times the last annual profits of £23 million.

Rothschilds acknowledge that Sinclair will eventually seek a full listing for the company's shares. But there is some confusion about what Sinclair himself will actually do with the money.

Rothschilds say that Sinclair wants to realise some of his investment. The company says that he wants to plough more money into the company, principally to fund the development of an electric car, expected to be launched in 1984 and which will cost £20 million to get to the marketplace.

If past performance is anything to go by, the company's statement is more likely to be correct. Sinclair has not only invested his money in the past, but most of his life as well, in his companies.

However, many finance men still hold the failure of Sinclair Radionics against Sinclair. He seems to hold the view that it was a failure of nerve on the part of the British establishment which slowed down the company that the Japanese were able to capture Sinclair's first two market creations, the digital watch and the pocket calculator.

At least one very senior ex-banker who was involved in Sinclair's earlier companies still queries the medium-term viability of Sinclair Research. But no broker offered an opportunity to buy shares in Sinclair Research by Rothschilds will refuse.

The way they put it in the City is that the banks talk to Cazanoves (a broker), Cazanoves talk to Rothschilds and Rothschilds talk to God.

This time round the man who predicts a golden age for the UK in the information age, is leading the way with his own stock, with God on his side.

City shocked but enthusiastic on ICL rights issue

WHEN ICL delivered its better-than-expected £23 million profit for 1980/81 in December it also took the financial community's breath away with a rights issue twice the size the money men in the City were expecting.

Most of the analysts had predicted a cash call in the region of £50 million. The call at £104 million looked, at first glance, indigestible. However, the groundwork had been well laid and ICL's key institutional shareholders, the Post Office Pension Fund, Prudential Insurance and several other leading City institutions had already announced that they were supporting the request for more cash.

According to Neil Barton, the computer industry analyst at brokers Cook Lumsden, the issue has already gone better than he expected.

Only a collapse in the market itself, which is unlikely, will prevent the issue from being a success, Barton said.

Barton also noted that the weakness he had expected in the ICL share price had not shown up, and the average premium – the difference between the offer price of the rights shares at 60p and the 70p the market was paying for the shares – indicated a very favourable response.

Barton was the only analyst to forecast correctly the ICL 1981/82 profit figure and he sees no reason to amend his £60 million forecast for this year, so far.

Most other analysts, particularly those at ICL's own brokers, are currently predicting a figure before tax, of £40 million for the current year. Apart from overseas tax ICL will have very little exposure to the Inland Revenue for the next few years and a forecast £40 million should mean a net profit of about £35 million.

This would be a useful improvement on this year's £23 million, but still relatively poor in terms of current turnover, just 3.2% against an industry average of 7 to 10%.

And the rights issue has, not unexpectedly, diluted potential earnings per share by about a third.

Barton's estimate of earnings per share around 9.6p has now been reduced to 6.3p per share.

But not everyone is entirely happy with the very conventional approach adopted to ICL's finances by Chairman Sir Christopher Laidlaw.

When he announced the rights issue Sir Christophor said that this would be the company's last call on the shareholders for the foreseeable future.

ICL is a company in the most expensive end of high technology and is in the middle of a complete restructuring of its entire product line.

What Sir Christophor and managing director Robb Wilmot have achieved so far is the elimination of the loss-incurring overheads and the restructuring of the balance sheet by reducing debt to a more manageable level.

With the proceeds of the rights issue and the rescheduling of the repayment of the £50 million preference shares due to the banks in April, net debt at ICL will amount to less than £100 million.

In conventional terms this is a major achievement, but ICL is not in a conventional business – or, for that matter, a conventional situation.

According to some City sources ICL has recovered from the worst but is so far showing no signs of positioning itself to return to its historic growth levels of 20 to 25%, or even gearing up to achieve 15%.

What the issue means

FOR those not familiar with the technical jargon of the Stock Exchange, here is a simple explanation of the ICL rights issue.

ICL, in order to reduce its borrowings, which stood at £209.4 million on October 31, 1982, is selling more shares in the firm.

The shares are being offered first to existing shareholders on the basis of two new shares for each three shares they now hold.

They are 25p shares, but are being offered, as a "right," to the existing shareholders, at 60p. The objective is to raise £103 million, after expenses.

The offer price is arrived at with reference to the recent price of the shares on the Stock Exchange, and on the advice of ICL's bankers and brokers, and usually in consultation with major institutional shareholders.

In this case ICL has indicated that the Post Office Staff Superannuation Fund, with 11.2 million shares, Prudential with 7.3 million shares and the Legal and General Assurance Society with 4.6 million shares will take up their rights.

The most immediate effect of the rights issue was to pull back the price of the shares generally to 70p from 85p.

Millionaire's chances

WHEN Robb Wilmot was made managing director of ICL less than two years ago he was given an option to buy 1,134,000 shares in the company at 32.14p each.

Although he has the right to buy those shares, and now an additional 126,000 at a price of 54p, he cannot exercise his option before May 10, 1984 – and even then, not unless it is as an executive of the company.

So, although he has already made a notional profit of over £450,000, Wilmot's chance to become a millionaire will stay tantalisingly out of reach until 1984, and may not last long even if the price then is over £1.08p, which is the point at which he will be a paper millionaire.

The gain on the shares will be taxed not as capital gains, which would merely mean a 30% gift to the taxman, but as income with the highest levels now 60%.

Scots disc maker stages £1 million recovery

DUDSON . . . . At forefront.

SCOTLAND-BASED disc maker Rodime has turned in year-end results which show turnover of £4 million and profits of £945,000.

The £4 million turnover for the year ended September 1982 compares with sales of just £56,822 in the previous year.

Rodime, basically a venture capital start-up, backed by the Industrial and Commercial Finance Corp, had losses, principally costs associated with the start-up, of £300,919 in its first year. The company, very much in the style of American venture start-ups, converted its start-up "losses" into almost £1 million in profits in just one year.

Rodime manufactures 5¼in Winchester discs with capacities varying from 26.6 to 53.3 Mbytes, and the company's major customer is now ICL which placed an order for £8 million worth of discs with Rodime late last year.

The ICL order, much like Rodime's adventurous launch of its shares on the New York Stock Exchange, was fraught with uncertainty up to the last moment, with Rodime's US rival Tandon making strenuous bids to win the ICL business.

In the end Rodime won, ensuring that the company's turnover this year should more than double.

The share placing in New York – an unusual move for a UK company still in a start-up phase and without a quotation in London – was delayed several times due to the volatility of the US markets in the autumn. Early in October, however, Rodime got its issue away, and raised $8 million.

Jacquard name will live on

ONE of the oldest names in automation, Jacquard will live on as in the form of subsidiary company titles within Applied Technology Ventures based at Santa Anna, California.

The ATV company has now been registered in the US to give corporate status to the business interests of the limited partnership which bought the Jacquard word processing and computer business from the troubled parent AM International last year.

Sales of the parent ATV group, which acknowledges that the Jacquard products are the main constituent of its turnover, now total more than $100 million annually.

Sales are organised through ATV Jacquard and servicing will be carried out via Jacquard Service Corp.

The company has a substantial presence in UK office automation and the UK operation will continue to be headed by Peter Hickman who now reports to Jacquard's new European director-general Claude R. Varley.

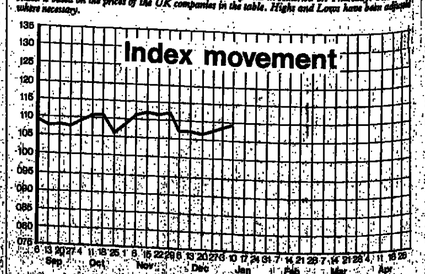
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 7/1/83 Index 108.61 Change +2.6

Pence High	Pence Low	London Stock Exchange Stock	Pence Price	Pence + or −	Pence Gross Yield	$ 1982/83 High	$ 1982/83 Low	US Stock	$ Price	$ + or −
260	161	ACT (Apple Comp) (25p)	260	+20	3.2	75¾		Amdahl	35¼	+1¼
190	160	BOC Int. (50p)	190	+10	3.2	41		Apple Inc	37¼	+1¼
172	101	B. Ryan Elect (25p)	172		4.6	34¼		Auto Data Pro	27¼	+¼
177	107	Chubb (25p)	134	+8		25¾		Burroughs	34¼	+¼
112	73	Comp Acc (25p)	112		5.4	20¼		Comp Auto	14¼	
202	173	C.A.S.E. (25p)	202		10.4	17¼		Comp Sciences	18	
202	173	De La Rue (25p)	202		10.4	17¼		Comshare	11	
202	173	Data (25p)	202		10.4	17¼		Control Data	39¼	+¼
484	388	Ferranti (50p)	484	+20	5.2	64¼		Cray Research	56¼	+¼
202	168½	GEC (25p)	202	+2	5.2	21¼		Data General	41	+¼
47	34	GEC (5p)	47	+1	5.2	21¼		Datapoint	19¼	+¼
47	34	Micro Focus (10p)	47	+1		44¼		Digi-Data Corp	17¼	
215	215	Micro Focus (10p)	215	+10		44¼		Digital Equip	102¼	+¼
215	215	Norpak (10p)	215	+10		44¼		Elec Data Sys	34¼	+¼
215	215	Plessey (25p)	215	+10		44¼		Gen Automation	6	
215	215	Prestel (1981) (£1.00)	215	+10		44¼		Harris	34¼	+¼
215	215	Prestel (1981) (£0.05)	215	+10		44¼		Hewlett-Packard	75¼	+¼
215	215	Quantel (10p)	215	+10		44¼		Honeywell	34¼	+¼
215	215	Racal Elect (25p)	215	+10		44¼		IBM	75¼	+¼
215	215	Radiation Lamp (P1 10)	215	+10		44¼		Intel	34¼	+¼
215	215	Rank Org (25p)	215	+10		44¼		Intergraph	34¼	+¼
215	215	Sound Audio (10p)	215	+10		44¼		Lear Siegler	34¼	+¼
215	215	Technology (10p)	215	+10		44¼		Memorex	34¼	+¼
215	215	Thorn (25p)	215	+10		44¼		Micro Peripherals	34¼	+¼
215	215	Thorn-EMI (50p)	215	+10		44¼		Motorola	34¼	+¼
215	215	Unlisted Securities Market	215	+10		44¼		National Semi	34¼	+¼
215	215	Bus Comp (10p)	215	+10		44¼		NCR	34¼	+¼
215	215	Dowsett (Eng) (10p)	215	+10		44¼		Perkin-Elmer	34¼	+¼
215	215	Dowsett Tech (25p)	215	+10		44¼		Prime	34¼	+¼
215	215	Hi Tech (25p)	215	+10		44¼		Prophecon	34¼	+¼
215	215	Micro Bus (10p)	215	+10		44¼		Sanders	34¼	+¼
215	215	Micro Bus (10p)	215	+10		44¼		Signal	34¼	+¼
215	215	Micro Focus (10p)	215	+10		44¼		Storage Comp	34¼	+¼
215	215	NMW (£1)	215	+10		44¼		Storage Tech	34¼	+¼
215	215	Norpak Micro (10p)	215	+10		44¼		Tandon	34¼	+¼
215	215	Sandoes (10p)	215	+10		44¼		Wang	34¼	+¼
215	215	Video Comp (10p)	215	+10		44¼		Xerox	34¼	+¼
215	215	Zydal Dyn (5p)	215	+10		44¼		Xidex Int	34¼	+¼
215	215	Zytron Comp (5p)	215	+10		44¼		Wang Lab B	34¼	+¼
215	215		215	+10		44¼		WYU	34¼	+¼

The table shows the closing prices in London on Friday and in America on Thursday. The Stock Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.



Company News is compiled by Kevin Cahill.

Briefcase micro sales to rise 12-fold by 1987

PERSONAL computers are in for a mixed time over the rest of the 1980s – if you believe the market researchers' predictions.

In business applications they are to be replaced by multifunction workstations, and sales of personal computers will taper off to an extremely modest revenue level by 1992, says International Resource Development (IRD) in its study "Vendor Strategies for Personal Computers/Workstations".

But in the area of data acquisition in laboratory automation and production test, personal computers will show massive growth, particularly in small data acquisition systems and instrument controllers, says Venture Development (VDC) in its strategic analysis of such small computer-based systems.

Over the next five years sales of portable briefcase micros and terminals will surge forward too, says VDC in a separate study. Shipments will reach 12 times their present levels by 1987, it predicts, led by the Osborne-like portable briefcase micro market segment.

Osborne-like portable briefcase micros will lead the boom.

Software gets a look in too, with another prediction from IRD portraying software that thinks like a person and is able to predict what a personal computer user will want and provide it before it is requested.

The projected surge in portable micros will be led by small privately-owned companies at first, paving the way for large systems manufacturers to enter this market this year or next. Until Osborne came along in 1981, there had been a low level of activity in the briefcase micro market, but it was the Osborne 1 that opened up the field.

VDC reckons Osborne held 56% of the portable market in 1982, in revenue terms, way ahead of nearest contender Hewlett-Packard. But HP only really moved in with its HP75C last September. At the time it seemed that HP had given respectability to the market, and would encourage its growth, rather as IBM had influenced the desk-top personal computer market with its IBM PC launch.

Now VDC says that IBM will come into the portable market, with similar effect. It sees such a move as a positive influence, indicating full acceptance of portable computers and creating a greater demand than already exists.

Meanwhile smaller US companies continue to move in, such as Compucase, Compaq and Computer Devices, joined now by Japanese firms including Sord and Epson.

While sales of portables surge, those of desktops peter out, to be absorbed by multifunction workstations which will serve as replacements for data terminals, word processors and personal computers. IRD's report says that the multifunction workstation market will reach $14,000 million a year by 1992 while business personal computers slump from a 1987 high of $3,500 million to below $500 million.

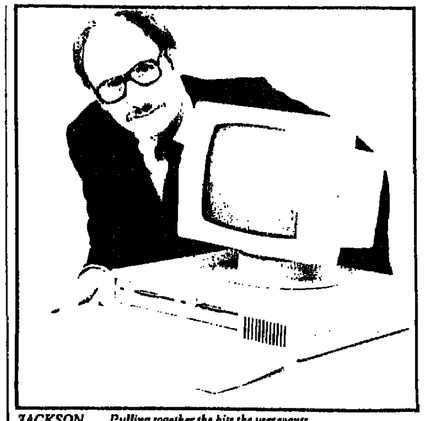
"What we're seeing," says IRD researcher Steve Weissman, "is the absorption of one technology's capabilities into another's." He draws a parallel with the increasing dominance of home micros over dedicated games machines. The takeover will start around 1984, the report reckons. In terms of numbers the multifunction workstations will only just have the edge, but will account for something like 90% of revenue.

In the data acquisition field, the rapid rise of personal computer based systems will come about because of their low price, says VDC in its study.

Shipments of personal computers in small data acquisition systems will grow from 6,400 units last year to 42,000 by 1987. In instrument controllers volumes will expand from 1982's 23,300 units to 102,000 in 1987.

The study also reckons that the rapid growth will increase user awareness and may fuel even more rapid growth as more prospective customers see the benefits. The growth could also be accelerated by more powerful and lower price micros coming on to the scene.

But for whatever application, personal computers rely heavily on their software for user acceptance, and development of really personal software – "idware" is the term used by IRD man Weismann in an article in VideoPrint – is put forward as a necessary catalyst for videtex to grow into the personal computer market.



JACKSON . . . Pulling together the bits the user wants.

UK company to start manufacture of IBM 'thinkalikes' in March

THE growing clutch of micros running the track taken by IBM has gained another British stablemate. Croydon-based Future Computers, a British company backed by the British Technology Group and venture capital company APA to the tune of £400,000 each, is set to storm the business and communications market with a range of IBM-like machines.

Manufacture of its FX series will start in March, with UK subcontractors, and it aims to take 10% of the UK market for 16-bit business machines being carved out by the likes of IBM and ACT Sirius.

But the company's aim is broader than just this market niche. "The IBM market is certainly something to go at," says managing director Brian Jackson, "but we are going at the whole microcomputer market in general. Our machines are not fully hardware-compatible with the IBM PC, though you can plug IBM boards into our bus and can use IBM software."

Rather than an IBM-lookalike, the range is dubbed an IBM-thinkalike.

Jackson reckons the machines will sell on speed. He claims they are around 50 to 60% faster than other 8088 machines on the market.

Tied to the speed is a low price – the mainstream standalone microcomputer in the range, FX20, will sell at about £1,870 to users – and a lot of built-in goodies. "Some of these are silly things like a time and date clock," says Jackson, "but what we have tried to do is pull together all the bits the user would like to have."

January is Apple blossom time

IT looks like being a bumper crop of Apples this month as the long-awaited Lisa microcomputer gets ready for its January 19 launch. Along with Lisa should come the Macintosh, a cut-down version of Lisa, and the Apple IIE, an 80 column 64K RAM refit of the company's staple Apple II.

So far the only details of Lisa's features are speculation, unconfirmed by Apple – which has bound those given previews of the machine by a pledge of secrecy. But its main points are thought to centre on user friendliness and ease of use, with much emphasis on graphics and the use of a "mouse" – a hand-held pointing device – to get away from dependence on keyboards for entering data to the machine.

All this will be driven by a Motorola 6800 processor, with half a megabyte of memory and the ProFile hard disc unit. The software it will run will include an integrated set of word processing, filing, financial spreadsheet and communications programs bundled as part of the systems price. This is expected to be about $8,000.

The smaller version of the machine, Macintosh, will incorporate many of the Lisa features, but with a price tag anything up to $5,000 less than its big sister.

This sort of machine is similar to the Xerox Star which put in an appearance 18 months ago but has not sold well at its $16,000 price.

The approach is also increasingly being taken up by other manufacturers.

Atari has talked of its ideas about future personal computers, while software company VisiCorp stole some of Apple's thunder when it launched its VisiOn product last month.

Tandon plumps for 3½ inch discs

MICROFLOPPY markets remain in a confused state as more drive manufacturers announce their adoption of one or another of the rival formats.

Latest to take the plunge is US manufacturer Tandon, which has plumped for the Sony size of 3½-inch discs, but hedged its bets by offering two versions: one compatible with standard 5¼-inch interfaces, the other compatible with Sony's interface, software and media.

Tandon's move followed announcements early last month by Shugart, which has also gone for the Sony 3½-inch format, and Micro Peripherals, which has followed Hitachi with a 3-inch drive.

This still leaves Sony looking the most strongly supported of the three rivals in this microfloppy market – and it is still the only drive that is available in the UK in any quantity for OEMs or in products. Sord and Hewlett-Packard are selling products incorporating the 3½-inch Sony drive, as well as Sony itself.

The third main contender pushing to be accepted as the standard sub-5¼-inch drive is a 3¼-inch drive from Seagate/Dysan/Tabor. Micro Peripherals had been expected to go with that design, and its switch to the Hitachi format has added yet another confusion to the standardisation saga.

And if that were not enough, Tandon is still thought to be flirting with the Seagate/Dysan/Tabor 3¼-inch design, ready to go with that if it proves to be accepted in the market.

Micro News is compiled by Robert Parry

Beyond the Computer Room:

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PLATFORM

Computer staff consultancy head Ian Humphries invites you to lie on his couch . . .

The awful clients who just don't understand you

IT was a Friday afternoon in late November. From my window, high above rain-lashed Harley Street, I could see small figures battling against the howling gale.

In my elegant consulting room, the intercom buzzed and the disembodied voice of my svelte receptionist announced tinnily that the last patient of the day had arrived. I asked her to show him in.

My patient lay woodenly on the couch, fists clenched, a nervous tic twitching spasmodically on his right cheek.

"Relax, Mr Staff-Consultancy – or may I call you Computer? Now, what seems to be the trouble?"

He swallowed hard, then blurted out: "My clients don't understand me!"

This would take longer than I had originally anticipated. I spoke reassuringly: "They treat you like dirt, do they? Can't make their minds up what they want, is that it? Always come to you at the last moment asking the impossible, hmm? Decide your best efforts, eh?"

He started up, open-mouthed in amazement. "You know?" His lower lip trembled. "You know what they're like?"

I nodded sagely. "Yes, I know . . . and I know what must happen if things are to improve."

He gripped my arm tightly. "Tell me, Doctor, tell me!" he implored.

So I did. I know exactly how our mythical Mr Staff-Consultancy feels. I would hasten to add, however, that none of my present clients should be offended – they're all wonderfully understanding people who can spot a good deal when they see it!

Blood suckers . . .

It's a fact that a lot of people who should know better delight in running down staff consultancies as vampires interested only in high fees; and here I might as well take on all comers by laying a fair share of the blame on the computer Press. Good news doesn't sell papers, or so the old saying has it – but bad news about staff consultancies apparently does. Let's face it, nobody's forced to use a consultancy – but, if employed intelligently, a consultancy can make a valuable contribution to a client's business.

. . . or blood donors?

There are several reasons for this. Firstly, the frighteningly high cost of permanent staff recruitment/retention dictates that clients often suffer from inadequate staffing/skill levels – here, consultancies offer a highly cost-effective, flexible means of coping with a fluctuating workload.

Secondly, using a consultancy enables clients to have at their disposal expertise which is neither needed nor affordable on a permanent basis – and I must stress here that consultancies don't provide bodies, they sell skills. Contractors – the freelance staff themselves – are, in my experience, highly trained, thoroughly dependable, hard working professionals, not 9-5 clockwatchers.

Thirdly, many large consultancies are themselves users – they understand the business.

So just what is the problem? Why are staff consultancies almost universally vilified?

I need you, so I don't like you.

Most of us have, at some time, borrowed money. Overdraft, mortgage, credit cards – all classic cases of loving the freedom of spending power but hating to pay the bills. That, I believe, is the problem with client/consultancy relationships.

Clients need people. Consultancies provide the solution. Human instinct deplores dependence. Clients abuse consultancies not because they feel strong in the buyer role, but because they feel weak.

Of course, it's not all one way traffic, but it doesn't help if clients persist in the belief that consultancies are a necessary evil instead of viewing them as extensions of the clients' own workforce.

Surely clients can meet them halfway? Both sides should take a long, hard look at how they deal with the other party and make a conscious effort to adjust entrenched, often damaging attitudes. I'm not saying it'll work every time, but it must be worth a try.

All right, nurse, I'll have my happy pills now.

Ian Humphries

Ian Humphries is managing director of a group of companies comprising Knight Computer Services, H. Programming and Systems and Huntershil International.

PROFILE

Wider horizons for Britain's biggest software house

SCICON may not spring to mind as one of the biggest names in the software world – but it certainly ought to. According to Datamation and the Financial Times it is just that – the biggest software house in the UK, and No 2 in Europe. One of the people responsible for getting it where it is is Warren Werblow, a chief executive.

Werblow joined Scicon in the middle of 1969, nine years after the company was set up. He had previously worked for IPC as an operations manager and for the Philips group of companies.

"None of our competitors is as strong as we are," says Werblow. "We're very well spread geographically, in the UK, France, Germany and in the Middle East – we have a number of marketing activities in Saudi Arabia and the Gulf States. And of course we've acquired a big US firm, and we export mathematical programming software to parts of South America."

Werblow was one of the prime movers in the acquisition of the US company. The California-based firm, Systems Control, is a 450-man outfit with a current annual revenue of $250 million. Werblow's reasons behind acquiring the firm were simple: "Scicon is an international company so we needed an activity in the US. The Scicon group has had a presence in the States since 1974, but we need the technology transfer of both systems and software that a Silicon Valley company brings . . . I know of no other British company that has acquired such a large American software house."

Scicon is not a small fry company in the rest of the world, either. Although it is the biggest software house in Britain, only 27% of its revenue comes from the UK. Nearly a third is from France, and another quarter from Germany. It employs a staff of over 3,500 worldwide and has a projected total revenue in 1982 of over £100 million.

WERBLOW . . . "Japan is obviously attractive."

According to Werblow the different countries have different strengths within the group. "The French are stronger in DP than the rest of the group, as they still handle a lot of data preparation. The Germans are strong on management consultancy and education, and in the States we handle multi-million dollar contracts to deal with things like vehicle emission control contracts."

Scicon is one of the few computer service companies approved to Defence Standard 05-21 for both hardware and software, and NATO quality control system requirements for industry, and defence is one of the main areas which Scicon operates – hence the company's low-key profile.

The other big area in which the group is involved is the oil industry – Scicon has worked for nearly all the big oil companies including of course BP. Scicon has been a wholly-owned subsidiary of BP since 1966.

The biggest thing to happen in recent years to Scicon was the announcement in July by BP that it had decided to combine its computer service companies under Scicon. This puts the computer services business among the other business streams in BP's concern along with things like oil exploration, nutrition and detergents.

This recognition by BP of the growing importance of information technology and communications means that Scicon is now responsible for BP's 40% interest in Mercury Communications, the joint venture with Cable and Wireless and Barclays Merchant Bank which is settling up in telecommunications following the liberalisation of the UK telecomms market in 1981.

Telecommunications is one of the areas Werblow believes Scicon will soon be heading into more and more. "Communications is the area which holds out the greatest opportunity for growth – it probably accounts for about 20% of our UK business at the moment. CAD/CAM and robotics are other areas we'll be looking into. In the US at the moment we're doing a lot of work on voice recognition and energy control.

"We'll probably try and expand geographically as well. Japan is obviously attractive, and the way we'll take there is probably through agents. The sort of thing of interest to the Japanese are mathematical programming and communication, rather than application software."

DOWNTIME

These toilets are being used by a computer.

It's enough to bring on a hot flush

THERE is no place on Earth safe from the ravages of new technology. It is scarcely possible to buy a television set without remote control.

Now the last refuge from the raging tide of mechanical marvels, the toilet, has been violated. No longer will it be possible to retire to the smallest room without interruption for the time required to read the *Sun* (approximately 45 seconds). Only last week I was confronted with the latest horror perpetrated by Swiss scientists.

This contraption was none other than an electric toilet, designed for hygiene. An electric motor drives a roll of polythene around the seat, ensuring that each user is presented with a virgin perch upon which to perform.

The demonstrator of this wonderment told me that I "could kiss herpes goodbye" thanks to this great leap forward for mankind. What concerned me, other than the assumption that I was so afflicted, was this:

What happens if the damned thing shorts out? A gentleman, if distracted by a sudden noise, could, er, have his aim spoiled. Any contact with the electrical parts of this devilish device could have shocking results.

My worst fears were indeed confirmed when I discovered a second hi-tech sanitary development, capable of providing just the type of distraction described above. An American psychologist is advocating "openness in bathrooms":

"Today's bathroom users are likely to want to communicate comfortably with others, and the bathroom telephone promotes that opportunity."

Rather ominously, the psychologist in question is a woman. What matter if one of her friends wishes to share an experience with her while she is otherwise engaged? A gentleman, on the other hand, may well be startled by the phone ringing, and be thrown across the room by a short-circuited electric toilet.

Well, at least he'd be able to phone for an ambulance.

Making the most of it on TV

THOSE IBM Personal Computers everyone's raving about are just a load of Toytown stuff, if Granada Television is to be believed.

The other night the company was trying to revive morale in the hard-hit North by showing successful companies making the most of high technology (the programme lasted 20 seconds). Up came Positron Computers with its microcomputer.

"Positron computer systems," boomed the voice-over, "make other microcomputers look like toys." And the camera panned back to show a screen with "IBM" all over it.

Top secret colour scheme

IN the wake of ICL's whizzo year-end results, ICL House, Putney, is being redecorated – and not on the cheap either.

"It's new paint," an ICL spokesman told Computer Weekly last week. But true to form, Europe's leading computer company had to maintain some vestige of secrecy: the spokesman refused to reveal the colour scheme, or to enlarge on the mysterious process by which ICL has in the past recycled old paint.

"And this button here stimulates a walk-out in the print shop."

Muzak while you wait . . .

CONSIDERING the amount of financial support ICL has received from the pockets of the British taxpayer, its French subsidiary doesn't seem to be playing the game.

An increasing number of Continental types seem to think that the playing of muzak to telephone callers awaiting connection is a jolly good idea, and ICL France is no exception.

But I was most disappointed to discover the other week, when I had occasion to seek telephonic contact with Les Wilmots Francais, that the selection of tinny tunes played for my delectation did not include the National Anthem, or even Rule Britannia.

What has happened to the days when we were proud to stand up and be counted, and to command respect from less civilised races?

Come on ICL, let's show these damned foreigners we're not to be trifled with!

Chad

10 YEARS AGO

FROM COMPUTER WEEKLY OF JANUARY 11, 1973: ICL Dataskil announced its intention of leaving the Software Houses Association, to whose funds it was the largest contributor . . . The National Computing Centre and Post Office decided to pool their resources to develop new publications and educational services . . . A new company, Redifon Electronic Systems, was formed by Redifon.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, January 13, 1983

More invisible than usual

ANYONE deciding to take an early holiday in East Anglia, and who happens to meander down to a little place called Snape, may find that their idyllic daydream turns into a futuristic nightmare. For there, the proposed site of the Sizewell nuclear reactor, they will find a throng of boffins, public servants and assorted experts arguing fiercely about a power station that could place a question mark over all our futures.

Half of them will be insisting that it is absurd to doubt the safety of the scheme, after so much time and money and effort has gone into checking out every possible angle. The other half will be irately dismissing those claims, saying that the risk of an accident is too great to be run and that experts are only human after all. The crux of what they are discussing will be software – which is in this case more than usually invisible.

The computer software industry may feel hard done by to be called into this debate over nuclear power, but it is a sign of the dependence society increasingly has on the new technologies. Objectors to the Sizewell reactors say that computer control programs, which are supposed to ensure that the water which cools the reactor is kept liquid under high pressure, are unproven, untried, and in fact not even written.

Sir Frank Layfield, the inspector at the public enquiry which started on Tuesday, will have to decide between opposing expert testimonies that rest heavily upon hypothesis.

Computer people tend to be particularly sceptical about the whole concept of expertise. An expert at programming, they say, is someone who has tried writing programs lots of ways and found this one seems to work.

Seems to. That may be enough for an inventory control system. But how reassuring is it as a globe control system? It will be interesting as the debate spins out to see how much faith is put in computer systems still on the drawing board.

Bernard Shaw observed that the British judicial system is one which supposes that if you pay two people to lie as hard as they can for their own side the truth will somehow emerge. That may work well enough for car crashes, where the damage has already been done, but it is not adequate when it comes to debating the possible accident-to-end-all-accidents.

Whatever the final ruling on the Sizewell reactor, it is clear that software is really coming of age. And coming of age, as every young person knows, has its joys as well as its responsibilities.

Satisfying the users

PERHAPS the most surprising finding of the 1982 Computer Weekly/Datapro Survey of UK computer users is how satisfied most users are with their systems (see pages 16/17).

Surveys are dangerous things, and manufacturers have been known to raise quite a head of steam after finding they are ranked below a competitor by a fraction of a percentage point. But while there are a few predictably poor showings in the survey, there is a generally high proportion of users who would recommend their systems to others. In the case of GEC and CTL, two British manufacturers, all their users would do so (although there were fewer than eight responses for each in the survey).

To match its improved financial performance, ICL showed a general turnaround in its ratings by mainframe users, after a thumbs down the previous year. Whether the new Wilmot style of management is responsible cannot be determined from the survey. But 1983 will be a crucial year for the company to sink or swim after making it halfway to the shore.

Next week's issue will analyse further the survey's findings on software. The main message that should be gleaned from all the data that has and will be published is not who is first and last in the overall rankings; rather it should be used as fodder by users to ensure that the manufacturers are providing all that they promise.

1984 and all that . . .

THIS week's example of the strange things people say about computers comes from Robin Harvey of Cheltenham, who wins £5:

"Microprocessor: The central processor of a computer formed onto a sliver of silicon about 160mm by 200mm."

Words for Word Processing
Keith Wharton Consultants

LETTERS

BTRL leads in telex experience

CHRIS NAYLOR is absolutely right (CW, December 9). Teletex is very much more than supertelex. The concept – that of worldwide communication between word processors – is easy to grasp: It is the problem of realisation in hardware and software that many have found difficult.

Let us not forget that teletex is an *international* standard formulated by the Telegraph and Telephone Consultative Committee (CCITT) defined in conformance with the open systems interconnection (OSI) model. It is defined to enable WPs to communicate over a number of different networks (eg public switched telephone network, packet switched network . . .) by altering only the lower "layers" of the protocol. Error correction, flow control, an extended character set to cope with all Latin-based languages are just some of the features included.

It is no wonder that a teletex software package is no lightweight – yet at the same time any WP manufacturer that wishes to remain in business will have to offer a teletex package in due course. In particular British industry will have to develop this software if it wishes to remain competitive.

This is one of the reasons that British Telecom Research Labs (BTRL) have developed a number of teletex facilities, including what Naylor rather unkindly describes as a "not-too-attractive" teletex terminal. In support of the BT teletex service it was thought to be vital that BT have hands-on experience of a teletex WP workstation. Since none was commercially available, a number of prototypes were developed at BTRL. These were never intended to be commercial products in their own right but they have provided invaluable information.

In addition they have enabled us to make important contributions, based upon sound experimental work, to the standards-forming bodies at CCITT, ISO etc.

BTRL is almost certainly ahead of the rest of the UK in teletex experience.

T. F. SMITH
Head of Computer Applications Division
British Telecom Research Laboratories.

'We'll be ready with terminal offers'

I SHOULD like to comment on Chris Naylor's article on teletex (CW, December 9). British Telecom first commenced its commitment to a teletex service in April 1981. It is likely to go fully operational at some time in the second half of 1983.

This period of preparation is not unreasonable in view of the scope of the objectives and the need to avoid mistakes in implementing a worldwide standard protocol.

Philips, in common with many other suppliers, is enthusiastic on teletex and believes it will be very successful. However, when the first edition of the British Telecom Technical Guide appeared in July 1981, it was clear that considerable work was still needed to adapt the standard to run on the PSTN.

The decision to use the PSTN is one that we support, as it will make available a teletex line to any user in any part of the country with ease. We and other suppliers have been working hard with British Telecom to realise this service.

For example, on the PSTN special technical steps are needed to permit private switching, ie the use by several terminals of one PSTN teletex line. This and many similar issues are now close to settlement.

Germany and Sweden are the countries which will implement a teletex service first. The period of time needed by them to set up a full service has been similar to the UK. They both use an X21 network (called Datex-L in Germany). Our PSTN network will probably be cheaper to the user than both X21 and the X25 network employed by some other European countries. Canada (using PSTN) and Far Eastern countries are following, and other parts of the world will be close behind.

Teletex is an ambitious protocol which will solve the problem of word processor intercommunication on a worldwide basis. British Telecom and its colleagues must ensure that their implementation decisions are correct. When the work is complete, and the service commences, Philips and others will be ready with their terminal offers.

A. C. PICK
New Business Planning Manager

Philips
Maidenhead.

'Knock various parties into action'

I FEEL that Chris Naylor's article (CW, December 9), What's gone wrong with that teletex service? serves only to compound the confusion and back-biting that currently prevails in the teletex market place and is the type of reporting usually found in certain daily newspapers and not that expected of a technical publication.

Naylor states early on that BT has cause to be dismayed at the non-appearance of terminals despite a Technical Guide being available for some 18 months, yet later he admits that the Guide is incomplete and more of a discussion document; he states that without a telex interface nobody will buy teletex terminals. What about intra-company or organisation working – surely attractive internally at 30 times the speed of telex?

Cannot Computer Weekly help the cause of teletex by producing an objective review, stating what the problems really are, as seen by both parties and potential users that is. Perhaps this would knock the various parties into action instead of the continual complaining about B . . . . . delaying the whole project in what is often an excuse for their lack of confidence in teletex or a gap in their own product line.

P. A. STEVENS
Telecoms Co-ordinator
British Gypsum
Kingston-on-Soar
Nottingham.

Revolution in banking

I WAS somewhat surprised by Jeremy Mitchell's Platform (CW, December 9) on the theme that consumers' needs must lead the "revolution in banking". The more so after hearing Rosemary McRobert of the Consumers Association say at the IT82 final conference that if the consumers had had their way the big banks would not have installed cash dispensers outside their branches in the wet and windy streets where they could be overlooked.

As an employee of a bank which incurred a large volume of criticism in initiating in-branch cash dispensers (from those who wished to see them outside) I have a feeling the banks can't win! It's all very well talking about the customers' needs but the truth is that British customers are extremely well served by a wide range of services, and aggravation with automation is largely a consequence of machine and system failures, yet these are consistently at a very much lower level than, say, British Rail.

Of course the banks are competitive – none can afford not to strive after 100% dispenser availability – even knowing it cannot be achieved with the complex mechanical and telecommunications equipment necessary. Competitive pressure of marketing ensures that new services continue to be made available, the only constraint being healthy doubts among long-serving bankers about the over-enthusiasm of the imported marketing men – and of course concern about the timescale in which data processing staff can produce the systems.

Home banking certainly attracts such doubts, as does bank account cashing at point of sale. Systems like these are enormously expensive to install and they demand security and stability of a considerably higher order than the current online systems as Mitchell recognises.

Will they be cost effective? Obviously a large (but fortunately diminishing) section of the population can manage quite well without a bank account at all. My guess is that the "twin tyrannies of place and time" which Mitchell would like to see overthrown by information technology in banking are recognised as such by only a small minority of the educated who participate in the consumer lobby, and of these only a tiny fraction would be willing to pay an additional charge for the convenience of home banking.

What the consumer bodies should be most concerned about is that the bandwagon effect does not overinflate all costs leading to price rises in a static (or in present times even diminishing) market. I have not noticed many credit card accepting locations offering discount for cash. Does the cost of handling cash/cheques now outweigh the retailer discount paid? I doubt it! Is there not an issue of principle here which the consumer bodies should be fighting a bit harder?

D. MORRIS
Shenfield
Essex.

Sick pay solutions

I READ with interest the article by John Kavanagh (CW, December 16/23). As a computer services company which has a complete SSP recording and administration system, I feel it worthwhile to respond.

SSP "solutions" can fall into two main categories: Those which calculate entitlement and pay SSP; and those which interpret the DHSS requirements and record absences, eligibility, administration and statutory reporting.

It is important to define which solution is being proposed, as this can be easily misconstrued. From our consultations with the DHSS and our clients, we are of the opinion that the difficulties of interpretation, including identifying eligibility; notifying exhaustion of rights, and discretionary powers to withhold SSP, will be far greater than monetary calculations for payment and subsequent reclamation.

JOHN REES
Group Marketing Executive
Target Computer Group
London N15.

Journalists go online

THREE points in Philip Hunter's article, Journalists go on line in IoW, require either correction or clarification.

Reporters on The News, Portsmouth, in whose stable the Isle of Wight Weekly Post resides, are already working on screen in Phase I of our three-phased approach.

Word processors are not involved in the operation. Reporters and sub-editors work on intelligent VDTs purchased from Digital Equipment Corp. These terminals are specially designed for the work of journalists, with the keys structured accordingly, and could have no other role.

Terminals will not be deployed in the "photocomposition room", as the article describes it, during Phase 3, for which there is a target date of January 1985.

P. G. THOMPSON
Associate Editor
The News Centre
Portsmouth.

The Which? Computer Show STAND NO776

Xtec

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WORKPLACE

Big hand for a firm with 'cheerful' sales policy

THE long room is filled with young people. Most of them are on the telephone, but the noise level is on a par with Victoria Station in the rush hour. Occasionally one of them shouts a magic word and the rest cheer.

The callers are selling computers.

The building is in Queen's Park, London, an erstwhile furniture warehouse. The company is Programmes Ltd, and its aim is a substantial reduction in the cost of selling. Formed in early 1981 with a single telephone, Programmes now employs getting on for 100 staff and won the 1982 BDMA/Post Office direct marketing award for a one-week promotion carried out for Courage breweries.

The brewery was aiming to expand its outlets in universities and college bars by about a dozen. Programmes signed up 40.

The person on the end of that one telephone which started it all two years ago was Elisabeth Gluck, now managing director.

"I didn't have a background in marketing at all," says Gluck, "but in communications. I worked my way through the 'phone book selling the idea of telephone sales to businesses, and the company just grew from there."

Telesales scores heavily over conventional marketing techniques in cost effectiveness, according to Gluck. If a company sends a salesperson to each prospect's premises, it can cost upwards of £50 per visit, with no guarantee of success. But if a team of skilled 'phoners contact the decision makers in the target companies first, good prospects can be identified before a salesperson calls, and borderline cases can often be tipped, giving the salesperson a base on which to build.

Gluck does not see the growing telesales industry as a threat to traditional salespeople, but as complementary service aimed at making better and more effective use of their time. This means that low value products with a potentially large market can now be sold by salespeople who can be fairly certain that their journey will be worthwhile before they set out.

Obvious candidates for this kind of marketing are applications software packages and small microcomputer packages.

One task undertaken recently by Programmes was for Commodore, which delegated the task of organising a roadshow where six 'phoners travelled around the country visiting 50 dealerships in seven weeks, contacting prospects on behalf of the dealers.

One of the dealers involved was enthusiastic about the results: "The response was terrific," she said. "We'll certainly use them again."

And most of the firms which have used Programmes were equally pleased with the results attained, with success rates of up to 50 per cent achieved, compared with a typical two or three per cent for mailshots.

The Programmes telephone room is an experience not to be missed. First thing every morning and afternoon, the 'phoners psych themselves up for the calls ahead by means of "the countdown". Seeing the entire sales force shouting and clapping themselves into action, conducted by one of their number, is reminiscent of a revivalist meeting.

The 'phoners work from scripts prepared by Programmes consultants in conjunction with the client, which covers the questions most likely to be asked by the decision-maker at the other end of the line. If a technical query comes up which the caller feels unable to answer, he or she will contact the client company for the relevant information and get back to the prospect within minutes.

When the prospect agrees to a sale, or asks for a salesperson to call, the 'phoner shouts "order!" The other 'phoners on his table cover the mouthpieces of their phones and shout back encouragement and congratulations, thus maintaining the high level of motivation required for such intensive selling.

The table supervisor moves constantly between the 'phoners under his charge, encouraging each of them to greater efforts. Such is the pressure on the 'phoners making around 100 calls a day, they are limited to three months selling after which they must move on to the other areas, including writing the scripts, consultancy and administrative tasks.

There is a real danger that a longer time on the 'phones could burn out the callers, and they are certainly the most highly-motivated people I've seen in a long while. Everyone in Programmes must do their stint on the phones.

The list of computer firms which have used Programmes reads like a Who's Who of computing, including such names as IBM, ICL, RTZ, Altergo, Commodore, Systime, Hewlett-Packard and Scicon.

Would you buy a computer from these people? The answer is probably yes.

Don't just plan for disaster – insure against it.

Protection against loss of information

ONE of the best ways to protect your installation against disaster is to let someone else worry about it for you. It's called risk transference – but most people know it better as insurance. Most policies cover only the capital cost of hardware replacement, and ignore the more critical areas of the loss of information and interruption of company-critical systems.

But a new insurance scheme from Wigham Poland, underwritten at Lloyd's, covers all these areas plus loss of profit resulting from DP disasters. Most types of installation are covered, ranging from micros to mainframes, and the policy reflects the special needs of computer users, including the replacement of all hardware up to five years old with new equipment.

Any new hardware installed is automatically covered. Damage incurred in transit is also covered. Media damage is catered for, as is loss resulting from malicious interference with either programs or data.

Even losses resulting from power cuts or British Telecom mishaps are covered.

It would be foolish to suggest that you rely totally on risk transference and do away with emergency procedures, but such comprehensive cover would enable you to sleep a little more soundly a night.

Costs vary with the value of the installation, and start from £25 for an Apple II worth £2,500, with £200 of media and a £750 restitution of records payment. The increased cost of working following loss or damage is estimated at £300 a month, and you'd get one month of cover for your premium.

At the other end of the scale, an ICL installation valued at £380,000 with £20,000 worth of media, and a recreation of data bill in the £50,000 region, would cost £1,400 a year.

When you consider the estimated increased cost of operation after damage or loss is £200,000, and that you get 12 months indemnity, that's pretty good value.

Further details from: Compu-Risk Department, Wigham Poland, Wigham House, Wakering Road, Barking, Essex IG11 8PB.

Make an old car happy

AFTER all the ties and hankies sent by your favourite aunt have been stored away, spare a thought for your poor old car. Stuck out in the cold and rain throughout the holiday, it feels forgotten and unloved. Now's your chance to make amends – treat your faithful jam jar to a new window sticker and brighten up its life.

For a measly 50p you can replace those fading "My other car is a Rolls Royce" and "British Grand Prix 1967" stickers with a brand new one guaranteed to baffle and mystify the Great British Public.

For this is a sticker celebrating a favourite operating system, VM. Produced in collaboration with the VM User Group, the sticker proclaims to the world, "VM users do it virtually all the time."

Only a limited number are available, so get those cheques and postal orders to the following address with all speed. Write to Mr P. Moate at 138 Chipstead Valley Road, Coulsdon, Surrey CR5 3BB, enclosing a large stamped addressed envelope, and the sticker will be rushed to you.

Go on, make an old car happy!

Workplace is compiled by Philip Hunter and Andrew Thomas

PUZZLER

HERE is a little exercise in mental arithmetic which has a par solving time of five minutes.

Given an unlimited supply of water, a 5-pint container, and a 3-pint container, what series of six pourings will leave exactly 4 pints in the larger container? A "pouring" means any operation involving a transfer of liquid – ie, filling, emptying or topping up.

See page 53 for solution.

An everyday story of computer sabotage . . .

by John Riley

SABOTAGE at a computer installation is the theme of a new 33-minute video released by Melrose Film Productions. The programme, called Time Bomb*, presents a plausible situation, which aims to warn management and computer and user staff that small security lapses can compound disastrously.

In the film a disgruntled analyst puts a latent bug in her company's invoicing and other systems. Due to breakdowns of communication and security the problem was not acted upon when it came to light and could not easily be remedied.

The recipe for disaster was inadequate documentation in development and in maintenance, inadequate program back-up, no records of program master file amendments, and inadequate manual back-up. This combined with inadequate user controls, poor physical security, over-reliance on key staff, unauthorised program changes and staff dissatisfaction, produced a nightmare.

*Time Bomb, Melrose Film Productions, 1-11 Old Town Street, London. Video £975 + 15% (inc. £150 for video hire of film).

Whooping it up at Tandon

NOW that you've recovered from your office Christmas party, spare a thought for the poor employees of Tandon, the US disc drive maker. While you were scoffing sausages on a stick in the function room over the *Dog and Bucket* at a cost of 50p per head, the 2,400 staff of Tandon were slumming it at the largest party in the history of Los Angeles.

Tandon boss Sirjang Lal Tandon, told all his workers to invite a friend along to the firm's thrash, bringing the headcount to nearly 5,000 in the LA Convention Centre. There was a free bar, all the wine you could drink, and a top-notch steak dinner. Entertainment was provided by three bands.

Indian-born Tandon was quoted as saying he felt he had to improve on the previous year's do, when only 2,000 people were invited.

The general consensus was that he had succeeded as well he might, having spent £250,000 on the fling. The bill for decorations alone came to £15,000.

And before you ask, No, I wasn't invited.

". . . and these flashing lights here, were installed to make the computer look more impressive."

Boost for DP lonely hearts

by John Riley

THE stresses and strains of working in computing are good news for video dating company Masterview. The company, which claims to be the only one in Britain to provide video cassettes of prospective partners, says that about 1.5% of its clients are in the computer industry.

Director Michael Oram explained: "The computer industry involves working unsocial hours, and this with the mobility factor has led many computer people to us. We have people of all levels, including for example a senior systems person from IBM."

After the video selection, clients check through further details about their prospective partners on a Vectographic MZ 36 Kbytes memory micro. The scheme, which has been going since February, costs £96 for a three-month membership, inclusive of video.

PEOPLE

Burroughs names top men in Ireland

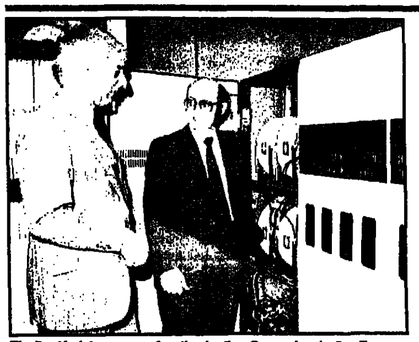
Kelly

BURROUGHS has appointed a general manager for Ireland. He is **Mervyn Kelly**, previously sales manager, Ireland, for Honeywell Information Systems.

Kelly has been in the Irish computer industry for over 15 years. He is a member of the Irish Computer Society and will represent Burroughs in the Irish Business Equipment Trade Association.

Burroughs now employs about 300 people in Ireland, including manufacturing staff at the company's Memorex plant in Dublin.

New to the company's commercial division in Ireland is **Derek Saunders**, formerly European sales manager for Euroco. He is also a member of the Irish Computer Society and will take responsibility for Burroughs sales operations in all business areas except the financial sector.



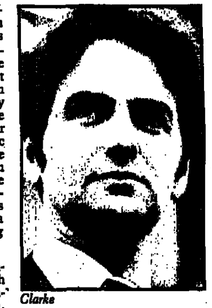
The Bradford data centre of mail order firm Grattan has the first European installation of the new Amdahl 6280 disc storage units, shown here. Bryan Little (left), Amdahl UK's recently appointed managing director looks over the units with Grattan director John Whitmarsh.

■ **Richard Walford** and **Brian Kemp** have joined Wesper International. Walford joins as UK OEM sales manager from Newbury Data, where he was product marketing manager. Kemp, formerly with Perkin-Elmer, becomes Wesper's European applications engineer.

■ **Adrian Dooley** has joined the Declan Kelly Group as project manager. He will also develop the group's use of its in-house computer facility for the building process. Dooley was formerly with Henry Boot.

■ Perkin-Elmer has promoted **Fred Mascarenhas** to UK product marketing manager, in charge of the company's marketing department. He joined the company in 1979 and has since worked in general marketing activities.

■ **Brian Hanley** is the new national sales and marketing manager at Perkin-Elmer. He previously managed sales operations at Honeywell for 14 years.



Clarke

■ **Rod Clarke** (above) has joined Grand Met's subsidiary High Technology Electronics as special projects manager. He was formerly with Sperry Univac which he joined in 1974, leaving as manager of the company's national technical support group.

■ Grundy Business Systems has named **Martin Shoosmith** as technical support specialist for the NewBrain portable microcomputer. He was in banking for six years before returning to college where he recently gained a BSc in mathematics and business from Middlesex Polytechnic.

Rumsey

■ EPS Consultants has appointed **Chris Marples** to manage its new office in Lichfield. He joined EPS last June to set up the new branch.

Terry Rayer, formerly personal computing manager at Allied Lyons, is joining Marples at the Lichfield office to market the company's Micro FCS financial planning system throughout the North of England.

■ **Ken Rumsey** (below) has become managing director of Bryant-Cybernex, formed to market in the UK video terminals designed and manufactured by the Canadian firm Cybernex. Brent-Cybernex is a joint venture between the two UK founder members Rumsey and **Roger Bryant**, who have spent most of their careers in the video terminal industry.

■ A mechanical engineering student has beaten off competition from computing and electronics specialists to become the Information Technology Student of the Year. Ian Dawson of Trent Polytechnic in Nottingham won the competition, sponsored by NCR, with a project on a voice input and output system for controlling an electro-pneumatic robot. The judges described the project as outstanding. Dawson beat 31 other entrants to the prize of a trip to the US for a transatlantic view of high technology. He has now graduated and is working on a management system for pig farmers.

■ Rimfield Technology, the company recently formed to inject high technology into industry, has announced its board composition. Managing director **Ted Blakely** has over 40 years' engineering experience and has for the last 14 years been head of Rimfield Tools. George Clark has been named technical director. He was previously head of future projects at Lucas Aerospace.

■ Altergo has appointed two new business consulants. **Brendan Foley** has joined as a member of the Custom Copics team. He was formerly senior systems analyst at Telelect Morse. **David Hodgson**, previously computer systems director at Rumbelows, joins the company's retail industry division.

■ IAL, the aviation communications and computer and medical services group, has appointed three new general managers. Mike Flynn, who becomes general manager, voice systems, was formerly with Grainger Associates as managing director of the company's UK subsidiary. General manager, business development is former Tube Investments finance director **Colin Samson**. **Alan Rosser** has been named general manager aviation marketing. He has been with the company for 23 years.

■ **Chris King** has joined Sintrom Electronics in its Hewlett-Packard product group as a product specialist. He previously worked for Mannesmann Tally looking after distributors in Europe.

Warburton

■ **Keith Warburton** (above) has been appointed zone sales executive for Scotland and Northern Ireland at Io Technology. He will be responsible for setting up a dealer network throughout the two areas. Warburton has had experience of selling high technology equipment, although this is his first appointment with a computer manufacturer.

■ **Richard Henry** has been appointed to the board of MDS Computer systems. He was formerly with ICL in marketing and will be responsible for marketing in the UK and Ireland at MDS.

■ Dialogue Distribution has appointed **Roger Davies** as field sales engineer for the Midlands and the North of England. He joins the company from Gothic, where he was semiconductor product manager.

■ Altergo has appointed a new Northern regional manager. **Jeff Spencer**, who will be based in Manchester, joins the company from Quadrant Software in Sheffield, where he was North-east regional manager.

Kilduff

■ Micro Focus has appointed **Paul Kilduff** (above) as group financial executive responsible for operations in the UK, US and Japan. He was previously manager of financial reporting at Indal, part of the RTZ group.

■ The recently-opened Computerland store in Southampton has appointed **John Covington** as systems adviser. An ex-paratrooper, he gained his computer training with Burroughs and Philips before working abroad for 10 years. He recently returned to the UK to work for a systems house in Southampton.

■ VSI Electronics has appointed **Steve Green** as franchise manager for its passive and electromechanical business segment. He was previously with AVX where he was area sales manager for South England and the Channel Islands.

■ **David Cockarill** (below) has joined Transtel Communications as marketing and sales manager. He was formerly with Siemens where he was general manager of communications sales.

Cockarill

Second in command at Marconi

MARCONI Space and Defence Systems has named **Don McMillan** as assistant managing director. He joined the company, then GEC Electronics, in 1951, and for the next 15 years was engaged in development engineering on a variety of guidance and electronic warfare systems.

In 1966, McMillan went to Australia in charge of Sea Dart fire control and guidance at the Woomera range. He was promoted to divisional manager in 1968 and awarded the MBE in 1969. After returning to the UK in 1970 he worked his way up from manager of underwater weapons to production director.

After the acquisition by GEC of Cincinnati Electronics (US) in 1981, McMillan became president of that company for an interim period and then director and vice-president of Marconi Electronics Inc, a post he held until returning to the UK at the end of last year to take up his new appointment.

Packwood

■ **David Packwood** (above) has been appointed to the board of Software Sciences as business director for the commercial and financial division. He previously worked for Systime as sales director and before that held senior management positions at Rank Xerox.

■ Two new sales executives have been appointed at MAI UK, which supplies the Basic Four range of business systems. Neil Palmer, formerly with ICL in the UK and US, has joined MAI's Birmingham office. **Maggie Goodyear**, formerly with Rank Xerox and Group 4 Total Security will be based at MAI's London office.

Mullins

■ Electrical, mechanical and electronic engineering firm Aish has appointed **Colin Mullins** (above) as system engineering manager. He will head a team of 11 engineers. Mullins was formerly the company's electronics projects manager.

■ As part of Centronics recent restructuring of its organisation, **Terence Harris**, formerly vice-president of the company's European operations, has been appointed senior vice-president of the new worldwide marketing sales and service operation. He will also continue acting as vice-president of European operations, which he has managed since its formation.

■ New sales and marketing manager at DLE Communications is **Bob Diggory**. He previously worked for a number of companies in the computer and data communications industries including EMI, Micom Borer, Data 100 and Tektronix.

■ **Pat Leahy** has been appointed UK sales co-ordinator at Murata Erie Electronics (UK). He was formerly with AVX.

CONFERENCES

■ **THE Computer Retailers Association** is holding a trade exhibition at the Institute of Directors in Pall Mall, London, on February 8. CRA members will exhibit their wares, but non-members and manufacturers have also been invited to bring along their micros, software or supplies. The exhibition is being held in conjunction with five CRA dealer group meetings: Apple, Sharp, Osborne, Commodore and 8088 based machines (such as the Act Sirius and the IBM PC). All members of the trade are invited to attend both the exhibition and group meetings, free of charge. Manufacturers' representatives will be there to answer any questions. Details from Debbie Walker on Buntingford (0763) 71209.

■ A FIVE-DAY residential workshop called The Computer in School has been organised by the University of Keele and will be held there from July 4-8. It is intended for teachers who are developing work with computers in schools, not only in computer studies, but also in other areas of the curriculum. The workshop does not assume specialist knowledge, but familiarity with a programming language is essential. Practical work will be carried out on BBC microcomputers and will include sessions on Basic and Pascal and using and developing computer assisted learning techniques. Fee is £110 (residential) and £70 (non-residential, numbers limited). Details from the secretary for in-service courses, Department of Education, University of Keele, Keele, Staffs ST5 5BG. Tel: (0782) 621111.

■ The Status Users Group is holding a conference on the capture and presentation of textual information at the Lancashire County Cricket Club, Old Trafford, Manchester on March 24. Status is a free text retrieval package. The conference will take the form of workshops with sessions covering word processor/office system links to Status; optical character recognition for text input; practicalities of input of large volumes of text to produce large databases; use of report generators to prepare specialised outputs; and use of Status in conjunction with other application programs. Details from J. Hetherington on (0532) 737475.

■ Apak Systems, which is holding a series of training courses in dBase II for both beginners and experienced users, starting in February, can be contacted on Bristol (0272) 276289, and not the number given in our December 16-23 issue.

DIARY

JANUARY 17

The single chip mainframe computer. BCS Glasgow Branch, Music Room, Staff Club, University of Strathclyde, John Street, Glasgow. 7.00.

State of the art process control in the chemical industry. BCS Hampshire branch, Mountbatten Theatre, Southampton. 7.30.

JANUARY 18

Microprocessors in the National Health Service. BCS Birmingham branch, Postgraduate Centre, Dudley Road Hospital, Birmingham 6.30.

Displays in the office. Joint meeting BCS Displays Group and WP&DA Group. Board Room, LSE, London. 2.00. Fee £3.00, £2.00 to members.

Microcomputers in Army regimental administration. BCS Hampshire branch, Mountbatten Theatre, Southampton. 2.00.

DP productivity. IDPM North-west branch, Manchester Club, 540 Spring Gardens, off King Street, Manchester. 6.30.

JANUARY 19

Dial – the date interchange standard. BCS Data Communication Group, BCS Headquarters, Mansfield Street, London. 6.00.

An end-user's view of databases. BCS Edinburgh branch, Mountbatten Building, Heriot-Watt University, Grassmarket, Edinburgh. 6.00.

Information technology and today's managers. Joint meeting BCS Hampshire branch and BIM, Basingstoke. Details from Graham Collins on Southampton 35181.

How to choose the micro you need. IDPM Kent branch, The Oak Room, Royal Star Hotel, Maidstone, Kent. 7.45.

JANUARY 20

Auditing guidlines. EDP Auditors Association, Little Ship Club, Bell Wharf Lane, London, EC4. 5.30.

Distributed Computing in a local authority. BCS Newcastle branch, Ellison Building, Newcastle Polytechnic. 6.30.

Computer assisted design – as used by the Ford Motor Company. IDPM Essex branch, County hotel, Rainsford Road, Chelmsford. 8.00.

JANUARY 26

A screen management facility for Cobol. BCS Cobol group, BCS Headquarters, Mansfield Street, London. 2.15.

Computers in health care. BCS Coventry branch, N. Block, Coventry (Lanchester) Polytechnic. 7.30.

Rita awards on first day of show

New directions in information technology to be the theme of NCC seminars . . . Boris Sedacca reports

IT takes a good deal of courage to set up an exhibition outside London, yet the Which Computer? Show has continued to thrive from year to year.

The show was first launched in November 1980 and the original plan was to hold it every two years, but the first was so successful that the organisers, Clapp & Poliak, decided soon afterwards to turn it into an annual event.

However, the first available slot at the National Exhibition Centre in Birmingham was not to come up until January 1982.

One of the benefits of locating the show at the NEC is that there is less traffic congestion than in London, and it is well serviced by trains and coaches. The NEC has free parking for 15,000 cars and a free bus service will take visitors to the main entrance of the show.

The Recognition of Information Technology Achievement (Rita) awards, an event which is now in its second year, will be presented at a dinner on January 18, the first day of the show, at the Grand Hotel in Birmingham. Sponsors for Rita include Software, a Computer Weekly publication, and Computer Talk, a sister publication.

Six awards are to be presented for hardware, software, support, user implementation, and outstanding personality. Last year's award winners included Clive Sinclair, OTL, Brailtel, Kalamazoo, South of Scotland Electricity Board and Micro Focus.

Another event scheduled for the first day of the show is the finals of a national computer pinball competition and fund-raising drive by the Muscular Dystrophy Group in conjunction with Tandy which will donate prizes to eight regional winners. The final amount raised will be announced at the show.

For the duration of the show, the National Computing Centre will hold seminars under the title Information Technology: New Directions for Users, organised as seven half-day sessions, covering the following topics:

- Business information and storage retrieval
- Business graphics
- Small business systems
- Networks for the business user
- The electronic office – user strategies
- Electronic office supplier forum 1: the mainframe approach
- Electronic office supplier forum 2: the distributed microprocessor approach

Graham Taylor of Langton Information Systems will show how an organisation can plan for economic and reliable information storage and retrieval. The established database discipline has now developed to the stage where it can provide real assistance beyond the centralised mainframe installation.

Consultant David Hebditch will discuss the use of computer graphics in business applications. Traditionally computers have conveyed information purely in terms of words and numbers. Graphical information allows people to assimilate summaries, and to visualise trends and interrelationships.

Martin Healy, professor of Microprocessor Engineering at University College, Cardiff, will present two sessions – small business systems and networks. The first session seeks to place in perspective the claims made by suppliers about their systems – particularly in respect of the provision of integrated data processing, word processing and communications.

The second session will analyse the concept of information systems integration and show how progress towards such integration is influenced by networks.

John Woods of consultants Woods and Seaton is responsible for the three sessions on office automation. The first will review key areas of development including word processing and document formatting, electronic mail and messaging, electronic filing and retrieval, personal computing, diary and meeting management, and end-user access to corporate data processing.

The remaining two sessions will be presented as forums by senior product development staff from the suppliers of office automation equipment. There will be five supplier presentations per session.

Within the exhibition itself, the Computing Services Association is organising CSA City which will feature software for financial modelling, insurance, estate agents, plant maintenance, architects, business management, computer-aided-manufacture, numerical control, solicitors, doctors, dentists, bakers, fuel distributors, hotels, building, linear programming, accounting, payroll, and viewdata.

The organisers of the Which Computer? Show have put in a good deal of effort to provide services to visitors. A free message-taking service will be available to keep people in touch with their businesses. The service will be operated by the Star Computer Group, and terminals will be dotted around the exhibition hall showing a list of names for whom the service holds messages.

A separate electronic directory service operated by Coventry Data Systems is also available free of charge. This is a database of suppliers, business areas, software, hardware and systems prices, with all the categories cross-referenced to match visitors' requirements.

Visitors with specific problems will be able to discuss them with NCC advisers at the NCC Display Centre. This service is also free. The NCC will also sell its publications and training materials at the show.

Visitors will also be entitled to a free personalised product enquiry card, a fast and easy way to request product information for exhibitors to send after the show, containing such details as name, position and address.

The organisers are confident that they have got the right formula for a successful show. At the 1982 show researchers with clipboards interviewed people as they were leaving the hall and questionnaires were sent out after the show to visitors. Two-thirds said they found what they were looking for.

BAILEY . . . Studying for computer science degree.

Gary—th Sharp shooter

MANCHESTER Unite keeper Gary Bailey is a computer buff: he is stud an MSc degree in comp science.

Bailey will be putting in ances on Sharp Electronics at the show. The connection the Japanese microcomp manufacturer sponsors the and Bailey also features in television advertisement for equipment.

On the stand Bailey will Sharp's new PC1251, a computer measuring four inches by 2.75.

Also on the stand will be 48K MZ-80A, seen here be Bailey keep goal.

THE third Which Comput Show will be held at Birmingham's National Exhibition Centre from January 18-21. Close on exhibitors will occupy 16 square metres on Hall 4, a 30% increase over the previous year.

WITH SUPPORT LIKE OURS, YOU CAN CONQUER NEW WORLD

Newbury Data is one of Europe's largest manufacturers and suppliers of computer peripherals.

We've got over 1,000 satisfied customers in Europe. Both OEM and end user.

To arrive at this happy situation we obviously have some very good products.

But we know it takes a lot more than that.

The key to our success can be summed up in two words: dedicated support.

Technical and Product Support is available throughout the UK OEM and end user; plus OEM support in France and Germany.

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Our spread of products encompasses disk drives, printers, VDU and media. So we can offer you a high degree of integrated knowledge.

The disk drives are available as cartridge, storage module and Winchester technology drives. With capacities from 6Mb to 300Mb.

The printer range includes dot matrix and daisy wheel printers. Including 80 col and 132 col, with speeds of 45 cps to 480 cps.

And we've also got a range of VDUs with emulations for the majority of mainframe systems.

To complement all this, we can also offer you a series of media products that includes disk packs and cartridges, printer ribbons and paper.

So you can have all your peripheral requirements looked after by one European-based company. Please contact us now for any further information you may require.

Newbury Data

A member of the DRI Group

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STAINES, MIDDX (0784) 50161/2. MANCHESTER (061) 491 0134. OEM & EXPORT SALES (0784) [illegible]

Free parking for 15,000 cars is one of the NEC's attractions.

Microcomputers will be out in force . . . John Kavanagh provides a round-up

All you'd expect from a top business event

ICL's DRS Wordshil 8801 word processor is part of the company's display of systems for small and medium sized users.

ON the products from the Which Computer? Show lives up to its claim to be the leading exhibition for business computer users. The emphasis is on computers and systems rather than terminals and peripherals. And given the target audience it is little surprise that microcomputers are way ahead as the biggest category of products on show.

Japanese manufacturers are now a familiar feature of UK exhibitions and at this show they are once again among the front runners in innovation.

Epson UK follows up the launch of the portable HX 20, which attracted much attention at Compec in November, with a second major product announcement. The new QX 10 is a desk-top machine running the CP/M operating system.

It has up to 256K of memory, a screen and two 320K floppy discs and provides graphics. The price is "considerably less than £2,000", Epson says. Options for the future include optical fibre communications interfaces.

Meanwhile Epson's HX 20 has already started getting attention from UK systems suppliers. John Bradburn (Computer Systems) has developed interfaces to link HX 20s to its Qantel range of business minicomputers. Bradburn says this move is in response to requests from users wishing to give the portable machine to sales staff so they can enter order details and later transmit them to the head office Qantel system.

UK firms, too, show that US companies no longer have things all their own way. Computer Ancillaries is demonstrating a new 15 Mbyte Winchester disc system, the top machine in its UK-built Caltext-Micro range. Prices, including a processor and display, start at £4,460 for a 64K system. The company says the Winchester version is aimed at users looking to move up from visible record computers. This market has good potential: there are 20,000 VRC users in the UK.

Computer Ancillaries also has a UK-built word processor. Over 500 have been sold since the launch in 1981. The system starts at £2,635 and can offer financial modelling and up to 10 Mbytes of disc storage.

Another UK manufacturer, LSI Computers, is giving an exhibition debut to the M-Four microcomputer, which features both eight-bit and 16-bit processors. The machine has an Intel 8088 16-bit chip and a Zilog Z80B eight-bit processor. The system chooses which processor to use depending on the software package.

LSI points out that this enables users to move to a 16-bit system without having to scrap their eight-bit software.

Prices start at £2,100 for a system with 33 programmable keys and up to 20 Mbytes of disc storage.

Networking for the US-built Sirius 1 16-bit microcomputer will be announced by the leading Sirius distributor, Applied Computer Techniques. The move will enable Sirius 1s to operate independently yet share files.

Commodore starts off a year in which it plans to set up a UK factory with the launch of the 500 microcomputer, which takes the US company firmly into the scientific market. The 500's high-resolution colour graphics is one of the attractions for scientific users.

Commodore is also showing the 16-bit 720 business system, which arrived in the UK at the end of last year. Other products planned for UK launches this year include the 64, a home and business system costing £350, and the Max games machine.

A new microcomputer from the US firm Cromemco gets its launch in this country from UK group Comart. The C10 costs £1,200 for an eight-bit machine based on the Zilog Z80A processor and running Cromemco's enhanced version of the CP/M operating system. The price includes a 12-inch screen, a 64K memory, a 390K floppy disc and £650 worth of business software – word processing, financial modelling and Basic.

Comart is aiming the C10 at large organisations seeking to put microcomputers on executives' desks.

Another computer retailer, Microland, is selling IBM Personal Computers ahead of the long-awaited official UK launch. And while IBM puts off the announcement other companies are already introducing compatible products in the UK.

The Which Computer? Show sees the second outing for Hitachi's IBM-compatible microcomputer, launched at Compec.

A new approach to mass floppy disc storage for microcomputers is being demonstrated by HAL Computers. The Scorpio 8 is an adopted floppy disc drive which accepts a cartridge of five 5.25-in floppy discs. It extracts each disc from the cartridge and loads it for reading as required. HAL says the product is aimed at expanding users who are having to add separate floppy disc drives or make the jump up to a Winchester.

And it points out that unlike a Winchester, the Scorpio 8 cartridge can be removed from the drive. For this reason it nicknames the product the Winchester Killer.

A fast Winchester drive for microcomputers, designed by a UK company, is being launched by the Japanese firm NEC. The speed comes from a 192 Kbyte cache memory, controlled by its own processor, which holds the most frequently used data for quick access.

The processor and memory also log the disc sectors which have been updated, to when back-up copies are taken only those sectors are passed to the security copy, reducing the back-up time and the number of floppy discs needed.

The drive was designed by a Cambridge firm, Hicon Research.

Higher up the computing scale most of the big names are out in force but with few surprises. The likes of IBM, ICL, Digital Equipment, Data General and Philips are showing established products for the small and medium sized business.

The respected Pick operating system will be in action on the General Automation and Computer Factors stands.

Although computer, software and systems suppliers dominate the show, terminal, peripheral, training and supplies companies are also dotted around the National Exhibition Centre.

These include Joseph Ware Associates, which is showing the fruits of a newly-signed distribution agreement with the big German manufacturer Siemens over a voice input system.

Here, as throughout the show, there should be a lot of hard talking going on.

The IBM Personal Computer, though not officially launched in the UK, is nonetheless available here from Microland.

The Computer Weekly/Datapro survey assesses users' satisfaction with their machines. John Riley discusses the results and compares them with last year's findings

Minis and small systems make users happy

USERS of Sperry Univac and NCR mainframes and of Honeywell and Burroughs minicomputers are the least satisfied of all computer users.

These are among the main findings of the 1982 Computer Weekly/Datapro survey of British mainframe and minicomputer/small business system users.

Other findings are that the general level of technical support throughout the industry could be better, and that there has been a big increase in numbers buying mainframes rather than renting or leasing them.

In this annual survey users assess their satisfaction and highlight the advantages and problems of their systems in all areas. These include reliability, level of maintenance and technical support and ease of operation.

Last year ICL and NCR mainframes got the thumbs-down. NCR users remain unhappy but ICL has achieved significantly better ratings this year. IBM has consolidated and improved its position at the top of the mainframe section.

Apart from Honeywell and Burroughs, the generally high level of satisfaction with minicomputer/small business systems has been maintained, with IBM and DEC topping the list. Particularly highly rated (although from a small sample) were Perkin-Elmer and Wang machines.

Burroughs, which scored lowest in 1981, is still poorly rated but shows signs of clawing back some lost user satisfaction.

The sample comprises 954 user responses (see Figure 1) which is very close to the 960 responses received in 1981. Together with use of the same questions as 1981, there is a sound basis for comparing the evaluation and recommendations expressed in the two years.

Taking the overall response, it is clear that users across the industry are not happy with the standard of technical support they are receiving. Three aspects, troubleshooting, education and documentation, were rated 2.5 on a scale of maximum 4.0.

By contrast, an average score of 3.0 was maintained for equipment reliability, quality of maintenance service, standard of manufacturer's software and overall satisfaction.

Technical support has lagged by a similar margin since the survey began in 1980. The manufacturers which were consistently better than average for technical support in 1982 were Wang and Perkin-Elmer for the minicomputers, and Amdahl for mainframes.

DEC scored well for troubleshooting and education, on its mainframes, but its poor documentation held it back. While IBM's technical support reported as average, the level of support with the 30XX series mainframes was found to be better than average.

The full survey report, to be published at the end of January by Datapro, provides a considerably more detailed breakdown of user responses about the advantages and disadvantages of their systems and their recommendations.

The biggest test of user satisfaction is whether users will recommend their system to others. Figures 2 and 4 list how many would and would not recommend their systems.

An additional guide in the same tables is provided by the overall satisfaction index. The index of 4.0 was calculated by asking users to grade aspects of their systems into one of four categories ranging from "excellent" to "poor", which were then weighted.

"Excellent" was weighted as 4, "good" as 3, "fair" as 2, and "poor" as 1. From this an average mark (between 1.0 and 4.0) could be obtained.

Users were asked to draw attention to significant advantages and disadvantages of their systems. The most common overall advantages and disadvantages and the proportions of users of certain individual models experiencing them, are presented in Figures 3 and 5.

For the whole survey, the top three benefits attracting positive attention with both mainframes and minicomputers were firstly, the ease of expanding or reconfiguring the system, secondly, the response time, and thirdly, the compatibility of programs and data carried over from other systems.

The major problems in both sectors continue to be failure by the vendor to provide all the promised software or support, the fact that the computer proposed by the vendor often turned out to be too small, and that required software was too often delivered late.

Sperry Univac, with a similar sample size to that of 1981, fared badly, whichever way one looks at Figure 2. Some 38.1% of its mainframe users were unwilling to recommend their system and there was a drop in the overall satisfaction index from 2.8 to 2.5.

In particular, the Univac 90 Series got a vote of no confidence, with 58.3% of users not wishing to recommend it. This may link with 58.3% of the 90 Series users finding that their computer was too small for their needs, although it was proposed by Sperry.

A high proportion (55.6%) of 1100 Series users found enhancements/changes hard to keep up with – however, 66.7% of them were prepared to recommend the system to others.

NCR, which did poorly in last year's poll, had a lower overall satisfaction rating than last year, dropping from 2.8 to 2.5. Part of the reason for this may be that 42.9% of NCR's mainframe user respondents did not receive all the promised software or support.

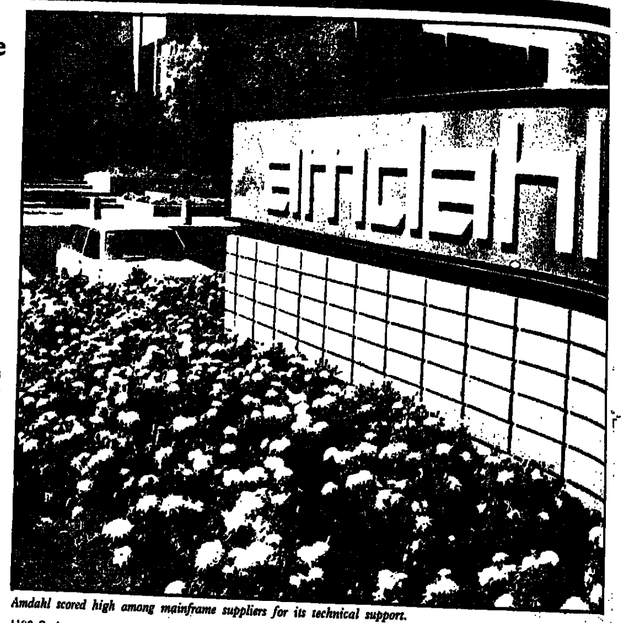
Technical support by NCR was reported not good, averaging 2.0, which is 0.5 below the unsatisfactory average.

On the other hand, ICL, which came bottom in the mainframe sector last year, has shown clear improvement, with 10% more users recommending their systems and a drop of those not prepared to recommend their systems from 32.4% in 1981 to 16.3% in 1982.

Regular problems experienced by ICL users include late software delivery and lack of provision of all the promised software or support.

Once again IBM came in most satisfactory overall. The 3000 series users noted remarkably few significant problems. On the other hand, some of the problems encountered by 4331 users were more than average. Some 13.3% found the 4331 excessively noisy.

■ Turn to page 17



Amdahl scored high among mainframe suppliers for its technical support.

Name of manufacturer	User-responses* (minimum of 4)	
MAINFRAMES	**1982**	**(1981)**
Amdahl	7	(3)
Burroughs	9	(27)
Digital Equipment	5	(7)
Honeywell	27	(35)
IBM	130	(101)
ICL	83	(77)
NCR	14	(22)
Univac	21	(25)
Others	25	(17)
Total Sample Sizes	321	(314)
MINICOMPUTERS AND SMALL BUSINESS SYSTEMS		
Burroughs	37	(16)
CMC	7	(14)
CTL	5	(10)
Data General	32	(29)
Datapoint	12	(4)
DEC	101	(110)
GEC	4	(4)
Hewlett-Packard	33	(32)
Honeywell	28	(40)
IBM	104	(112)
ICL	36	(125)
NCR	14	(22)
Nixdorf	6	(n/a)
Perkin-Elmer	4	(3)
Philips	4	(8)
Prime	18	(26)
Systime	18	(16)
Texas Instruments	11	(6)
Wang	7	(7)
Others	90	(44)
Total Sample Sizes	633	(646)

*N.B. Results based on fewer than eight responses are of interest but for statistical purposes should be treated with caution.

Figure 1. Number of participants in the survey.

Datapro will publish the complete results of the survey in a report British User Ratings of Computer Systems at the end of January. Copies of the report, at £50 Swiss francs each, may be ordered from Datapro Research S.A., CH-1164, Buchillon, Switzerland.

Manufacturer & Model (user response in brackets)	Overall Satisfaction 1.0-4.0)	ADVANTAGES: Percentage of users happy with response time	ADVANTAGES: Percentage of users finding system easy to expand/reconfigure	PROBLEMS: Percentage of users finding enhancements/changes to hardware/software hard to keep up with	PROBLEMS: Percentage of users not getting all the software or support promised by vendor
		Average: 51.1	Average: 52.3	Average: 19.3	Average: 15.6
Honeywell 64/DPS series (9)	2.8	33.3	55.6	22.2	11.1
Honeywell Level 64 (7)	3.0	57.1	57.1	14.3	14.3
IBM System 370 (19)	2.9	42.1	31.6	15.8	0.0
IBM 4331 (15)	2.7	46.7	60.0	20.0	26.7
IBM 4331 Group 2 (8)	3.0	37.5	50.0	25.0	25.0
IBM 4341 (53)	3.0	52.8	45.3	22.6	5.7
IBM 4341 Group 2 (13)	3.0	76.9	84.6	23.1	7.7
IBM 3033 (7)	3.0	85.7	42.9	0.0	0.0
ICL 1900 Series (10)	2.9	30.0	10.0	10.0	30.0
ICL 2966 (17)	2.8	47.1	58.8	5.9	23.5
NCR 8400 (7)	2.6	71.4	71.4	14.3	57.1
NCR 8500 (7)	2.4	28.6	71.4	42.9	28.6
Univac 90 Series (12)	2.5	41.7	41.7	8.3	16.7
Univac 1100 Series (9)	2.6	44.4	44.4	55.6	11.1

Figure 3. User satisfaction with certain mainframe models.

Manufacturer & Model (user response in brackets)	Overall Satisfaction (Scale 1.0-4.0)	ADVANTAGES: Percentage of users finding system easy to expand/reconfigure	ADVANTAGES: Percentage of users happy with response time	PROBLEMS: Percentage of users not getting all the software or support promised by vendor	PROBLEMS: Percentage of users finding computer proposed by vendor was too small
		(Average: 65.4%)	(Average: 50.2%)	(Average: 17.9%)	(Average: 17.5%)
Burroughs B80/90 (9)	2.3	44.4	22.2	11.1	33.3
Burroughs B800 (9)	2.6	22.2	44.4	44.4	44.4
Burroughs B1900 (15)	3.0	86.7	53.3	6.7	6.7
CMC Reality (7)	3.0	85.2	28.6	28.6	28.6
Data General Eclipse (10)	3.1	70.0	50.0	30.0	0.0
Data General Nova (16)	2.8	37.5	37.5	30.0	0.0
DEC PDP-11/34 (33)	3.0	72.7	54.6	18.2	12.1
DEC PDP-11/70 (24)	3.1	83.3	62.5	8.3	16.7
DEC VAX-11 series (20)	3.9	75.0	60.0	0.0	5.0
Hewlett-Packard 3000 (17)	3.1	70.6	88.2	17.7	5.9
Honeywell Level 6 (10)	2.6	90.0	70.0	20.0	20.0
Honeywell DPS4 (11)	2.7	45.5	18.2	36.4	36.4
Honeywell Level 62 (7)	2.6	14.3	14.3	28.6	42.9
IBM System 34 (75)	3.1	70.8	36.0	5.3	16.0
IBM System 38 (24)	3.2	66.7	16.7	12.5	33.3
ICL System 10 (20)	2.8	50.0	40.0	20.0	40.0
ICL 2903 (20)	3.1	45.0	45.0	20.0	30.0
ICL 2904 (20)	2.6	25.0	45.0	0.0	30.0
ICL ME29 (38)	3.1	65.8	52.6	26.3	18.4
NCR 8200 (8)	2.8	50.0	37.5	50.0	25.0
Systime 5000 (9)	2.9	77.8	55.6	0.0	22.2
Systime 6000 (9)	2.7	77.8	66.7	33.3	0.0

Figure 5. User satisfaction with certain minicomputers and small business systems.

Honeywell slides

■ From page 16

Of the other mainframe manufacturers, Amdahl and DEC users found few problems (although the sample was low), and their level of technical support was generally high. In both cases users reported delivery of equipment/software ahead of schedule.

Users liked the Burroughs operating system and the overall ease of operation, which scored 3.6 and 3.7 respectively. However, Burroughs fell down badly in the ratings with its technical support, with an average rating of 1.7, the lowest in both sectors of the survey.

Compared with last year, Honeywell has taken a slide in the minicomputer ratings. A quarter of Honeywell's users would not recommend their system to others compared with 15.4% last year.

Honeywell also comes bottom in the overall satisfaction index (Figure 4) with 2.6, representing a drop from 2.9 in 1981.

Around 30% of the Honeywell users experienced problems of higher than expected cost, late delivery, wrong sized computer and absence of promised support.

Honeywell's Level 62 and DPS 4 in particular caused problems without compensating noteworthy advantages, according to the survey. The most significant overall advantage of the Honeywell range was that 53.6% found the systems easy to expand and reconfigure.

Burroughs, which came rock-bottom last year in the minicomputer ratings, has improved its overall satisfaction rating from 2.4 to 2.7, and this with a doubling of the user responses.

The B1900 is well liked, with 93.3% of its users prepared to recommend it and 86.7% finding it easy to expand and reconfigure. It was the poorer ratings for the B80/90 and B800 models that dragged the overall figures down.

IBM consolidated its good position, although the overall satisfaction index dropped from 3.3 to 3.1. Fewer users were satisfied with the System 34, which fell from 3.4 to 3.1: the low ratings for ease of conversion (2.6) may be a factor.

Only 16.7% of System 38 users considered the response time good, and 33.3% found it too small for their requirements.

Overall, IBM users gave documentation the highest rating out of the whole survey (2.9), and 46.2% found that productivity aids to help keep programming costs down were a significant advantage.

ICL maintained its average position. Generally the computer proposed by ICL for 22.6% of its users turned out to be too small. Lateness of deliveries was another reported problem. Although 17.4% of users received equipment earlier than expected, 17.4% received it late, with 20.4% receiving required software late.

The ME29 increased its overall rating from 2.7 to 3.1. Some 6.1% of ICL minicomputer users found the equipment excessively noisy.

The most noisy machines were NCR, according to 35.7% of its users who found their systems excessively noisy.

Datapoint was considered slow in delivering its goods. Some 58.3% of required software was delivered late and 33.3% of users experienced delays in delivery/installation of equipment.

However, all users found the system easy to expand/reconfigure, none would not recommend their system, and the overall rating rose from 3.0 to 3.3.

In contrast, the most efficient deliverer, Prime, slipped from 3.2 to 2.9, with an increase in users who would not recommend the system from 3.9% to 11.8%. The reason for this is not clear, as very few problems were experienced by users, and 88.9% found their system easy to expand/configure. Some 33.3% of equipment and 22.2% of required software was received ahead of schedule.

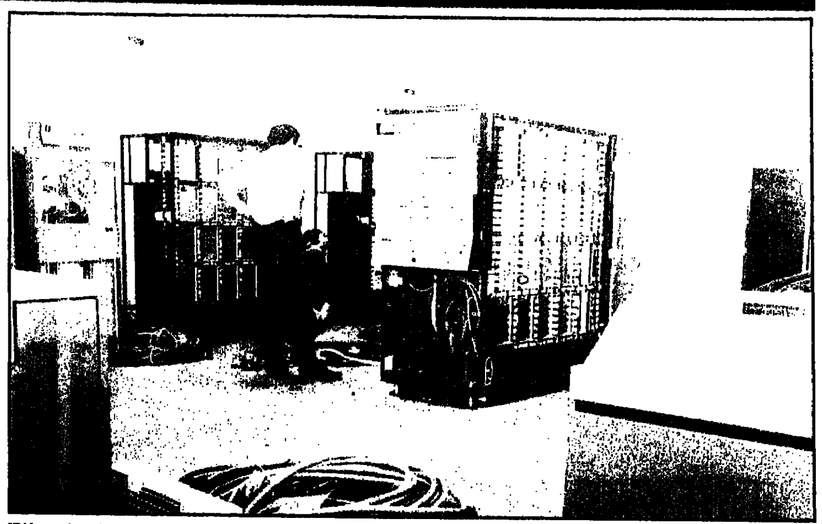
Users of Perkin-Elmer and Wang minicomputers were especially happy, although the user responses were low.

There has been a big jump in the number of users buying their mainframes direct from manufacturers, from 45% in 1981 to 72% in 1982.

This is the result of a massive drop in renting or leasing from manufacturers, from 24% to 4%, and a lesser, but still significant fall in users leasing from third parties from 30% to 24%.

There are two causes for the overall trend: increasing pressure from manufacturers, and increased user experience.

The main impetus is likely to have been pressure by manufacturers in the form of increased rental and leasing charges. ICL's equipment sales to leasing companies dropped from 15.5% to 10.1% of the total company turnover over 1981.



IBM stayed at the top of the mainframe ratings but its technical support was rated average.

Manufacturer	Percentage of users who would recommend their system to others		Percentage of users who would not recommend their system		Overall Satisfaction Index (Scale 1.0-4.0)	
	1982	(1981)	1982	(1981)	1982	(1981)
Amdahl*	100.0	(100.0)	0.0	(0.0)	3.0	(3.3)
Burroughs	77.8	(70.4)	11.1	(22.2)	2.8	(2.9)
DEC*	80.0	(85.7)	20.0	(0.0)	3.0	(3.6)
Honeywell	73.1	(81.8)	7.7	(6.1)	2.9	(2.9)
IBM	86.2	(81.8)	6.9	(8.1)	3.0	(2.9)
ICL	65.0	(55.4)	16.3	(32.4)	2.8	(2.7)
NCR	50.0	(59.1)	21.4	(31.8)	2.5	(2.8)
Sperry Univac	38.1	(68.0)	38.1	(16.0)	2.5	(2.8)
Other	69.6	(83.3)	8.7	(16.7)	3.0	(3.3)

*N.B. Fewer than eight user responses.

Figure 2. User ratings — mainframe manufacturers.

Manufacturer	Percentage of users who would recommend their system to others		Percentage of users who would not recommend their system		Overall Satisfaction Index (Scale 1.0-4.0)	
	1982	(1981)	1982	(1981)	1982	(1981
Burroughs	58.3	(60.0)	19.4	(26.7)	2.7	(2.4)
CMC*	100.0	(71.4)	0.0	(14.3)	3.0	(3.0)
CTL*	100.0	(90.0)	0.0	(0.0)	3.2	(3.4)
Data General	78.1	(100.0)	9.3	(7.4)	2.9	(2.8)
Datapoint	91.7	(100.0)	0.0	(0.0)	3.3	(3.0)
DEC	90.1	(85.5)	4.0	(8.2)	3.1	(3.1)
GEC*	100.0	(75.0)	0.0	(25.0)	3.0	(3.0)
Hewlett-Packard	90.9	(90.6)	9.1	(3.1)	3.2	(3.3)
Honeywell	57.1	(69.2)	25.0	(15.4)	2.6	(2.9)
IBM	88.5	(85.6)	4.8	(9.0)	3.1	(3.3)
ICL	77.3	(76.6)	13.4	(10.5)	2.9	(2.9)
NCR	78.6	(77.3)	7.1	(13.6)	2.9	(2.8)
Nixdorf*	83.3	(n/a)	0.0	(n/a)	3.0	(n/a)
Perkin-Elmer*	100.0	(66.7)	0.0	(0.0)	3.8	(3.3)
Philips*	100.0	(62.5)	0.0	(0.0)	3.3	(2.6)
Prime	82.4	(76.9)	11.8	(3.9)	2.9	(3.2)
Systime	83.3	(81.3)	5.6	(6.3)	2.8	(2.8)
Texas	90.9	(100.0)	9.1	(0.0)	2.9	(3.3)
Wang*	100.0	(60.0)	0.0	(20.0)	3.6	(3.2)
Others	68.9	(72.7)	12.2	(18.2)	3.0	(2.9)

*N.B. Fewer than eight user responses

Figure 4. User ratings — minicomputer manufacturers.

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NCR SYSTEMEDIA

SOFTWARE MONTH

ICL seems set on a new path to profitability. This month we take a look at changes through the eyes of third party software houses; examine relationships under the Trader Point scheme; and discuss the company's outward-looking software policy.

Is the leopard really changing its spots?

RECENT results suggest that ICL has finally turned the corner in its fight for survival, and changed from a government embarrassment to a profitable company.

It would seem that the organisation has at last rediscovered the two basic realities of its corporate existence: that it exists to make computers, and that only the availability of adequate software makes this possible.

In fact, so radical have been the changes at ICL during the last two years, that it is only when these two fundamental, and to ICL, somewhat revolutionary, principles are put together, that the current diverse and almost confusing strands of Britain's only major indigenous hardware manufacturer can be understood.

Along with the corporate structural changes and the expanding product range, a new candour is blowing like a breath of fresh air through the corridors of power. Gone are the evasive but self-righteous protestations of yesteryear.

Ray Piggott, newly appointed divisional director with worldwide responsibility for Trader Point, recently admitted, for example: "We accept that we have little experience in selling to third parties – we are, in fact, learning as we go, and are bound to make some mistakes." He went on to explain that his own appointment was largely due to an extensive background in just such selling with Data General.

PIGGOTT . . . Learning as we go.

And in a similar vein, Keir Hopkins, director of the applications systems division, remarked: "We accept that we would dearly love to be, and possibly act as if we already are, where we expect to be in a year's time – with a larger and more active salesforce."

But despite all the internal protestations of a new-look ICL, cynicism persists; if there is not mistrust, there is certainly doubt among long-standing ICL software suppliers.

There are those who claim that the leopard cannot change its spots, and that deep within the heart of ICL there still exists an "old guard", which, like a bureaucratic civil service, considers itself the custodian of an ancient lore, with a particular responsibility to protect the company from that young upstart, Robb Wilmot.

High in this list of cynics are Bernard Panton, chairman of Oxford's Telecomputing, and John Gandley, managing director of Berkshire-based Gandlake Computer Services.

Telecomputing is best known for its teleprocessing monitor, TPS; a monitor that allows TP systems to be written with minimal coding. The TPS systems are both compatible and transportable across the complete range of DME, TME and VME operating systems.

The main claim to fame for TPS is, however, historical, since it was first produced at a time when ICL had little, if any, teleprocessing capability of its own. Indeed, Panton claims in his current sales literature that ICL has finally accepted the superiority of the Teleprocessing product by naming its own TP monitor TPMS, a clear derivation, he claims, from TPS.

Readers may recall that not so long ago ICL actively marketed TPS for Telecomputing, and that the cessation of this arrangement was followed by a period of litigation that was in turn followed by silence. Questioned on the full facts of the case, Panton succinctly replies: "They settled out of court."

His scepticism on the "new ICL", however, clearly lingers on. Talking to us recently, he suggested that the true software boundaries within ICL are not the traditional "micro, mini and mainframe", nor even "systems and applications"; but "competitive and non-competitive".

The suggestion is that ICL is more co-operative than it has ever been in helping third-party suppliers to produce applications software that has, perhaps, a limited market; but that it remains uneo-operative towards software houses intent upon producing packages in direct rivalry to ICL products.

This is not to say, however, that things haven't changed. He believes that Telecomputing and Wilmot's ICL now have "a working relationship" while "if Wilson was still there, I don't think we'd even be talking."

ICL's Keir Hopkins does not think that Telecomputing's view is totally fair, but echoing the company's new candour, he admitted that "granted the trouble that ICL has given that company in the past, it is quite understandable that he should remain suspicious and even a little bitter."

But at the same time, he pointed to the latest edition of the ICL Software Catalogue to demonstrate that TPS is now actively promoted despite its competition with TPMS, in the same way that the much-praised EMAS 2900 (Edinburgh Multi-Access System) from the University of Edinburgh is actively promoted despite its competition to VME 2900.

John Gandley of Gandlake Computer Services, a company that together with its sister firm, George 3 Systems Programming, offers a wide range of systems software particularly for DME, echoes Panton's doubts. "Many of us are afraid that ICL simply likes to pick our brains," he told us.

"It's certainly true that third-party software can be produced better, faster and more efficiently than ICL can produce its own – we don't have the internal wranglings that bedevil all large organisations, for one thing! – but the result is a suspicion that ICL, certainly in the past, has used companies such as ours simply as a source for innovative ideas.

"Co-operation," he went on, "is a two-way process based on mutual trust. Gandlake has always been open and honest with ICL, but the reverse has not always been so. Much of the third party software industry is waiting to see ICL put its new words into action, by providing and creating a new atmosphere of trust."

To be fair to ICL, it is true to say that most of the current criticisms come directly from those companies that are, and have always been, involved in third party software for mini and mainframe computers. It is difficult for these organisations to accept that the ICL that has been so insular in the past can change overnight.

On the other hand, companies that have become involved more specifically with the ICL Personal Computer, probably as Trader Point dealers, often paint a very different picture of ICL.

Patrick & Leach Microcomputers, a company formed early last year by two South Wales business management consultancy, Patrick & Leach Ltd., is one such Trader Point dealer. Managing director John Goodeve-Docker, of years' large company ex with Burroughs, recogni same problems in ICL a Gandley, but believes ICL well on the way to solving th

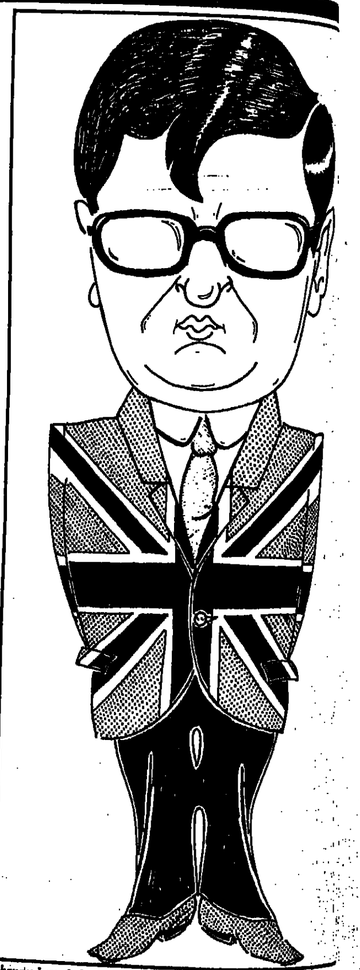
"ICL seem to be ma their own bureaucratic probl he told us. "With the Trad concept they are now put spirited attempt at reform them, and with some succes company now has the right and, above all, the right pr But the ICL PC is not exactly but it is at least well priced an abundance of tried and software – which, after all, quite correctly, to be ICL's criterion."

Talking about his working relationship with Goodeve-Docker said particularly impressed by ity and quantity of sales provided by the company and, incidentally, recently had an inquiry from a national chain for thirty PCs. One cannot wondering if the ICL of old have borne to pass such a prospect out of its own hands!

Goodeve-Docker went suggest that the success of is due to two factors: "firstly is involved in national sales rather than simply the and Insular trade

■ Turn to page 19

HOPKINS . . . A new candour replaces self-righteous protestations.



Changes brought by new-broom Wilmot are giving ICL a fresh image

PANTON of Telecomputing . . . "Working relationship" following out-of-court settlement.

GOODEVE-DOCKER of Patrick & Leach . . . Impressed by the sales leads ICL provides.

Changes at ICL

■ From page 18

secondly, the main market is the small businessman (with no knowledge and, therefore, no fear, of the old ICL) who sees in ICL a large and reassuring manufacturer that is also British!"

Mike Keeble is the marketing manager of Holland Automation International UK, supplier of HAI*BAS. HAI*BAS is an "operating environment" plus business software that can be used as an alternative to CP/M on the PC. According to the ICL Software Catalogue, it has received the honoured accolade of becoming "ICL distributed software".

Asked to comment on the new-look ICL, Keeble told us: "I have no real experience of ICL in the 'bad old days', and so I cannot really make a valid judgment. However, the impression I gained from the comments of others was that ICL was like an overweight giant constantly on the verge of collapse should anyone dare to place an obstacle in its lumbering path."

This description no longer seems valid. "I was pleasantly surprised," Keeble went on, "to find, when HAI started dealing with ICL, that the old giant wasn't, in fact, all that bad. Compared to some other distributors and manufacturers we deal with, ICL scores very highly indeed."

Keeble then went on to explain why he thought the new ICL was succeeding in this area. "The quality of their dealers is very high. The company does not seem to have gone the standard micro distributor route of signing up anyone with a sign in the window. All the dealers seem to belong to that rare breed that can sell, and understood what they are selling, in order to satisfy the needs of the customer.

"Indeed, one dealer told me that he had applied to a number of other big-name manufacturers to become a dealer, but it was only ICL who vetted his company thoroughly. This vetting gave ICL the edge over the other organisations, because the dealer felt that by going with ICL he would be keeping good company."

Keeble concluded: "The accusations I have heard levelled against ICL in the past certainly do not appear to be wholly justified when applied to that part of ICL with which we deal. These same accusations could, however, be levelled very accurately at some of the other organisations with whom we have dealt."

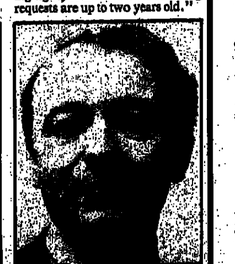
So, what exactly is happening at ICL? Is it successfully changing for the better as Keeble and Goodeve-Docker believe; or is it still much the same as ever, as Panton and Gandley fear?

The astute reader will have noticed one interesting point: much of the pro-ICL lobby appears to belong to third parties dealing with the newer branches of the company; in fact, with those areas instituted by Robb Wilmot. This would perhaps suggest that remnants of an old guard do in fact linger on in the deeper and more entrenched warrens of "old mainframe ICL".

But another inference can be drawn: those companies that have praised ICL are largely those companies that are totally dependent on ICL. Companies like Telecomputing and Gandlake have survived in the past not because of ICL, but despite ICL; they have little to fear in being outspoken now.

Perhaps the last word, then, should go to John Gandley: "Much is heard of the new ICL attitude towards third-party software suppliers, but, frankly, we're still waiting for it to materialise. Although there are some encouraging signs, some of our outstanding requests are up to two years old."

KEEBLE . . . Old accusations are unjustified.



GANDLEY . . . New attitude hasn't materialised.

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ICL is using Trader Point to get together with the software industry

Four-way collaboration is aimed at the whole market

"TRADER Point," said an ICL representative recently, "is a commercial umbrella aimed at bringing together ICL and the software industry in order to get the company into the *whole* computer market. It is in fact, a new marketing initiative which opens ICL's doors to the software industry.

"Under this commercial umbrella," he went on, "ICL can come to one of four different contractual relationships with its dealers: distributorship, commission, collaboration and OEM.

"The distributorship agreement," he explained, "enables an organisation to buy ICL equipment for resale with added value, usually in the form of software." This is the traditional high street microcomputer dealer selling the ICL PC along with anything else it wishes. Provided only that the potential dealer meets the professional standards laid down by ICL, he is not then restricted to ICL products.

Telecomputing, for example, is a company with a subsidiary Trader Point distributor supplying the PC. It is also widely tipped to become one of the first official IBM PC suppliers.

But, in an almost complete about-turn, the new ICL takes the view that provided its distributors fulfil their side of the agreement, ICL cannot, and would not wish to, lay any further restrictive demands on that supplier.

"The commission agreement, on the other hand, is usually sought by software houses operating in a specific and well-defined vertical market." Within this agreement, the commission agent does not necessarily take legal possession of the equipment, but instead performs all the pre-sales negotiations, adds on software value to the equipment and eventually installs the hardware.

"For this," continued our spokesman, "he receives a commission of up to 15% of the hardware value."

"The collaboration agreement is an agreement that provides an environment in which ICL (a hardware expert) and other companies (software experts) can work together to exploit their individual strengths." The precise terms vary from one agreement to another, in order to maintain maximum flexibility.

This is the type of agreement that might be sought by a major software company with a contract to develop large-scale software for foreign states. Indeed, another spokesman indicated that news of just such an agreement running into many hundreds of thousands of pounds might be imminently "leaked or announced".

"The final agreement is the traditional OEM agreement which enables companies to purchase standard ICL devices, such as printers, for later inclusion in other systems."

Trader Point is now well established. It was officially launched on March 30, 1982 and already includes agreements with more than 200 dealers and software houses around the world, mainly concentrating on DRS systems and/or the personal computer.

There is, however, no practical upper limit to the number of Trader Point dealers. "Many of our traders occupy vertical markets," elaborated our spokesman. "One specialises in optometry, and another in life assurance. They could occupy adjacent premises without competing with each other!"

In fact, so successful is this new enterprise that ICL has recently upgraded the operation to full divisional status in order to develop the potential of third party trading on a worldwide basis. At the head of the division is Ray Piggott, ex of Data General and Rank Xerox Datasystems, and now divisional director of Traderpoint Sales Division (worldwide).

Piggott spoke frankly about his role within ICL in a recent interview with Computer Weekly. "My aim," he said, "is to bring an orderly relationship to the ICL-Third Party industry. The ultimate end is that ICL on the one hand, its third party suppliers in the middle, and the end-user on the other hand, should all know and understand what is required and what is provided by the ICL Trader Point relationship.

"Through Trader Point, ICL is seeking a means of relating with the software industry, both domestically and internationally, so that ICL and its third parties can form a mutually beneficial relationship that will also be of benefit to the end-user. The market place will be better served by the new ICL now working in close collaboration with software suppliers."

Fine words – that effectively say very little. But in fairness to Ray Piggott, he did stress that the interview would be better held in six months' time, after he had time to discuss his ideas within the company.

"Too often in the past," he said, "ICL personnel have found out what is happening through the pages of the computer press. That is wrong."

We tried then to put him on the spot with existing possibilities. What would happen, for example, if an existing Trader Point dealer began to sell more of a rival PC (IBM, say) than the ICL equivalent? Would pressure be applied to rectify the situation?

Piggott replied: "All contracts have cancellation clauses. If a dealer does not honour his Trader Point contract, we could be forced to cancel that contract. Similarly, if ICL does not honour its contract, the dealer is at liberty to cancel.

"But provided that any dealer honours its contract with ICL, it is, as an independent company, perfectly free to seek any other agreement it requires to further its own business requirements.

"For example, if that dealer subsequently established a dealership with a rival manufacturer, and sales of the ICL PC declined in relation to those of its rival, ICL would neither wish, nor be able, to apply pro-ICL pressure by way of sanctions against the dealer. If this situation was to occur, we would treat it as a commercial problem to be redressed by the logical arguments of our salesforce."

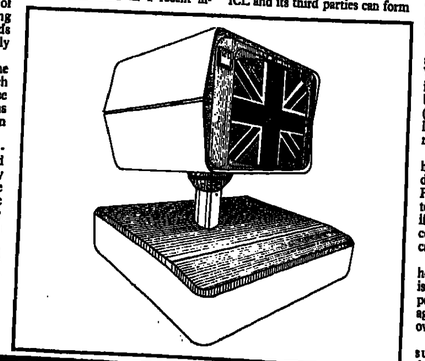
What, then, we asked, would happen if a large multinational corporation contacted him direct with an order for 500 PCs and the bald statement that it is contrary to corporate purchasing policy to deal with middlemen? The implication would be that ICL would lose the order to, say, DEC's Rainbow 100, if he insisted on dealing through the nearest Trader Point dealer (as, strictly speaking, he should).

This answer took a little longer. "We are not a charity," he said, eventually. "Our loyalty must be, first and foremost, to ICL. However, we also recognise that there must be an accepted set of ethical guidelines that must be obeyed wherever possible.

"Thus, if a multinational corporation came direct to ICL for more than 100 PCs, our first duty would be to direct the customer to the relevant Trader Point dealer. But if the corporation refused to speak to dealers, then it would be our clear commercial duty to find some way to satisfy the customer without damaging our relationship with the local Trader Point dealer."

Systemsolve, one of the first companies to join the ranks of ICL's Trader Point scheme, has no doubts that ICL's "new look" will succeed. Managing director John Stanley recently said:

"ICL has the right attitude and the right machines in the right commercial agreements. Under its established image as the major British computer manufacturer with solid support and engineering back-up, ICL has now found a formula for success in which Trader Point is a vital element."



Tight-lipped reticence of yesteryear goes out the window

The 'new, extravert' company reverses its approach to software

THE two areas that would best demonstrate any change of attitude and approach towards software within ICL are perhaps Keir Hopkins' applications software division, and Dr Chris Cheetham's VME operating system.

The former, by its very nature, is in the thick of any more open contact with third party software suppliers; while the latter belongs to that area of ICL that is most openly and frequently criticised by outsiders.

Keir Hopkins is the director of ICL's application system division. He is one of the old stalwarts of ICL now clearly revelling in the new atmosphere of Wilmot's regime. "The company is much more extravert," he told us.

"We are now constantly looking outwards to other companies in order to identify areas of mutual benefit; as for example, our marketing agreement with Mitel." (Under this agreement, ICL now markets the Mitel SX 2000 Superswitch as the ICL DNX-2000 digital switching system, and the two companies have further agreed to "collaborate on maintaining a leadership position in a cost/performance of the information terminals which embrace data, text and voice.")

Hopkins sees four levels to ICL's new approach: the ICL Software Catalogue (his own pride and joy); improved liaison with software suppliers; substantial collaboration between his own applications systems division and the software companies; and in some cases, the release of ICL source code to software houses.

The ICL Software Catalogue has to be seen to be believed. It is perhaps the single most tangible demonstration of a change of attitude within ICL. Produced by Hopkins' own division, and he retains the final say concerning inclusions, the latest edition of this publication includes well over 1,000 entries of third party software.

"The next version," he told us, "will include CP/M-86 and perhaps Unix software." The doubt over the inclusion of Unix is simply that he is not yet satisfied that ICL's Unix implementation is up to the exacting standards he requires for his Catalogue; even though he is sure it soon will be!

Improved liaison with software suppliers includes monthly clinics to discuss any problems. ICL critics frequently claim that liaison is, or at least, has been, virtually non-existent, and that the biggest single problem has always been an ICL reticence about releasing interface information.

"This," said Hopkins, "is currently being remedied. We are, unfortunately, only now in the process of defining and documenting the interfaces, which in the past often related to systems that were themselves in a state of rapid change and evolution. Even if we had been able, we would have done nobody any favours by releasing information that might have been out of date within a few months."

In terms of collaboration, Hopkins told us that ICL is now providing advance information on its own products and marketing plans, so that third party software houses can feel more confident in their own actions. "We aim, for example," he told us, "quite happy to own that we have no current plans in the airline reservation market."

Finally, and perhaps most surprisingly, it is now possible in certain circumstances for some systems houses to take over the full ICL source code and documentation in order to provide more advanced support and enhancements to ICL-designed products. This is a complete reversal of the traditional approach.

"What is a relatively small customer base for ICL," explained Hopkins, "could actually be very significant for a single systems house. In these circumstances, it is a clear advantage to both companies and the end-user – and a good example of the new extravert ICL – to adopt this approach."

Proof of a change of attitude and products within ICL will come not from ICL employees, however, but from outside ICL. And it must be evident within ICL's mainframe operating system before it can be given full credence.

ICL's Dr Chris Cheetham claims that the company has finally got its operating system in order. "VME," he says, "provides the ability to design and produce fast, uncomplicated, and secure programs that can go straight into use.

"These are the historic virtues. But what is becoming more and more apparent is its ability as a single operating system to handle all the office requirements – distributed teleprocessing, electronic mailing, and so on – and thereby increase productivity at a lower cost. There is, after all,

■ Turn to page 21

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C.A.C.I.

Enthusiastic claims are being made for products such as 1-2-3 and MBA. David Ferris reviews their importance

Premature birth for the new generation?

A COUPLE of new software products called 1-2-3 and MBA are getting rave reviews from personal computer users. The public relations men are doing a great job, because everyone's saying that a new generation of integrated management tools has arrived.

As usual, the truth is less glamorous, and this month I'll review what *is* important about these new products, and what the snags are.

To understand what 1-2-3 and MBA do, you first have to consider how corporate users of personal computers spend their time.

A lot of machine usage goes into (i) developing month-to-month or year-to-year financial projections, in much the same way as mainframe financial modelling package users do. In other words, spreadsheet applications à la Visicalc; (ii) generation of pretty graphs – especially line charts, bar charts and pie charts – to illustrate their spreadsheet projections; (iii) developing reports using a word processor; and (iv) retrieving and manipulating data with a simple end-user database package.

They do other things, too, involving communication with mainframes and other micros, but for the purposes of the immediate discussion these can be ignored.

So the big four applications are spreadsheet, word processing, database, and business graphics. However, the packages used need to be able to talk to each other easily. The useful kinds of integration I'm aware of are shown in Figure 1.

This necessary integration is the crux of all the excitement about MBA and 1-2-3, because in some ways they really do offer interesting improvements over existing products.

Using today's established products, like Visicalc, PFS:, Wordstar, and Visiplot, you do have a level of integration.

However, the "new generation" improves matters in three main ways:

Convenience. Conventional inter-package integration is clumsy, because to go from program to program you first have to dump the data into a standard format file (a DIF file, in micro jargon), then load in the new program, and read in the data file just created.

On the other hand, the more integrated products let you go quickly, with little thought, from program to program. This is really important, because it means that powerful tools get used: for example, users of conventional products often won't check the graphic representation of spreadsheet data, because they can't be bothered with all the fiddling around. Now it's all much more practical to use the different tools.

Command Consistency. Conventional integration really amounts to a crude, after-the-event stringing together. Consequently, the interlinked spreadsheet, word processing, database and graphics packages have different appearances and sets of commands. Each one has its own way of doing the basics, such as saving files, moving the cursor, and shifting modes of usage.

Some vendors, such as Visicorp, have tried to disguise this major shortcoming by clever and attractive packaging of their product line, but the problem remains.

In contrast with this, the newer, more integrated products were designed to incorporate the different areas from their inception, so there is a far greater degree of consistency in use. Learning time is reduced, and it's much easier to remember how to do things.

So the first conclusion we can draw is that the micro world isn't about to be torn asunder by a software revolution. The new integrated products are nothing more than a sensible evolution from existing technology: a more generalised version of the established products, with a few architectural cobwebs cleared up.

Nevertheless, clearly a good thing, revolutionary or not.

SOFTSELL

The second conclusion to draw is that there's still a long way to go, and that proven but less integrated packages still have a lot to offer:

Incompleteness. A lot of important facilities are unimplemented in the new products, or are in an extremely rudimentary state. For example, the word processing capabilities are either non-existent, or too crude for real use. Database query and report languages, and screen formatting, suffer equally.

Version-One-Ness. The products are new, large, and complex. The various vendors are feeling the competitive heat, and are rushing in to announce their products, with optimistic release dates.

Clearly, there are a lot of ragged edges in the early releases. Thus at the moment, MBA is too slow in execution: and 1-2-3 doesn't offer any word processing capabilities, or formatted screen support for repetitious data entry to the database.

Overenthusiasm. Integration is going to be a key issue over the next few years. The new "integrated" packages go some way towards what's needed, but are far from being a panacea. In the excitement, the issues of effective inter-micro and micro/mainframe integration are being glossed over.

Communications are about to present tremendous headaches to micro users, and all the integrated packages are likely to offer is simple asynch or bisynch file transfer facilities. This is way short of the kind of integration needed by tomorrow's corporate user.

The conclusion of all of this is: The MBAs and 1-2-3s are a fine and good thing, but for many uses they still need a lot of polishing. While they have strengths, they also have weaknesses compared to the more proven, less integrated sets of packages.

By the time the major shortcomings have been corrected, leading vendors such as MicroSoft and Visicorp will probably have released competitive products.

Either way, the customer can only benefit by the increased integration.

David Ferris

The MBA System is available from: Context Management Systems, 23864 Hawthorne Blvd, Torrance, CA 90505 (213) 378-8277
The 1-2-3 System is available from: Lotus Development Corp, 55 Wheeler Street, Cambridge, MA 02138, (617) 492-7171

SPREADSHEETS: Pass models
– to a word processor, for inclusion in reports;
– to a graphics package, for line charts, bar charts, etc.

DATABASE: Pass data
– to a spreadsheet, for use in building a model;
– to a word processor, for example, for use in a report or mass mailing;
– to a graphics package, for line charts, bar charts, etc.

GRAPHICS: Pass graphs
– to a word processor, for use in reports, etc.

A priori, other combinations are possible, like graphics to a spreadsheet, but it's hard to see how they can be useful.

Figure 1: Useful kinds of spreadsheet/word processor/database/graphics integration.

David Ferris is a software industry consultant based in San Francisco and London. Covering technical and marketing issues, he assists hardware, software and venture capitalist firms.

Extravert company

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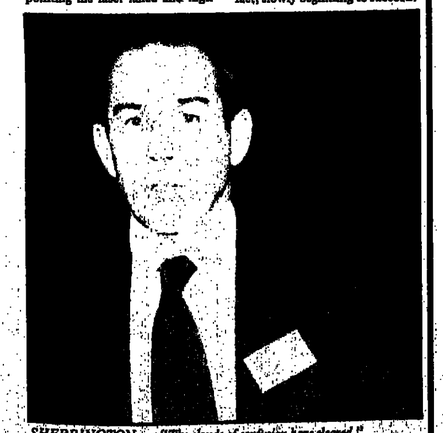
only one basic set of software to maintain."

This view is, in fact, echoed by Howard Sherrington, managing director of Northern Software Consultants, who told us: "The clouds of confusion have now been cleared, with Robb Wilmot pointing his laser lance and highlighting that the ICL software policy is wedded firmly to VME 2900, with TPMS as the monitor, and IDMS as the database." (Whether by foresight or luck, Northern Software had already decided to focus its own software efforts on just those packages.)

The overall feeling is clearly that ICL is trying to change and is, in fact, slowly beginning to succeed.



SHERRINGTON . . . "The clouds of confusion have cleared."

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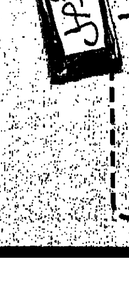

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Martyn Harris reports on the teaching of programming skills to the blind

These could be best-taught programmers in the business

AT the Royal National College for the Blind in Hereford things move a lot more slowly and gently than in the average college of further education. No slamming doors, racing down corridors, roaring canteen lunchtimes or gunning motor-cycle engines in the driveway.

Students walk quietly and carefully in twos and threes; door-handle levers are curved over to avoid snagging on clothes; projecting desk corners are sheathed in rubber, and wherever there is print – on door labels, phone books, warning notices and timetables – there are also the little, white, goosepimple forests of Braille.

"High-velocity courses just don't work here," says Louis Woolfson who heads the computer studies department. "We have to take things a lot more slowly in this environment. The normal vehicles used to assist teaching like diagrams, flip charts, blackboard work and so on are just not available to us."

And Woolfson, quite naturally, does address his class from the back at one point, and no heads turn towards him.

Out in the commercial world programming courses are getting shorter and shorter, and more and more intensive. A few weeks for Cobol, a couple of days for Basic. The rising cost of lecturers and premises and the shrinking profit margins of the computer business mean that all companies are cutting down on the frills.

Most customers now have to pay through the nose for unbundled courses that are very often little more than a high-speed, five-day monologue over a smoking OHP projector, a massive wad of printed notes and a fervent prayer that somehow they will make sense of it afterwards.

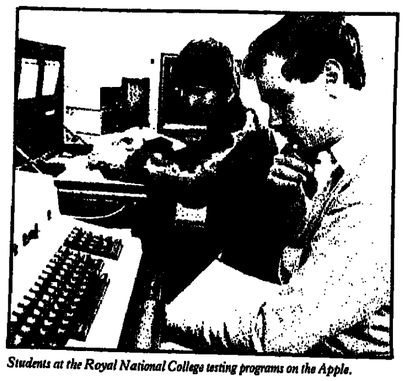
It's not the best way to become a programmer perhaps, but the best most companies can afford. Even in State schools and colleges O-level and A-level computer courses are being pushed through in two terms, and that alongside any number of other courses and examinations.

But at Hereford, things are different. The 26 blind and partially sighted students in the computer studies department are able to wander, at will, in and out of the generously equipped computer centre and to spend hours alone on the terminals, to test programs and browse through the operating system procedures and data files.

Eight are on the City and Guilds NCC Course 746 (basic computer programming) while the rest are taking Oxford GCE O-level in computer studies. The courses last only a year, but during that year that is pretty well all they do, apart perhaps from a few other options in general studies, or what are called "living skills".

These can be necessary, Woolfson explains, because many blind students have led a very sheltered or disrupted early life with little opportunity to learn basic skills like shopping, using telephones or public transport.

Blindness also presents other problems. It is rarely a straightforward handicap like an amputated leg, but often part of a more complex disorder. It is often, for instance, associated with diabetes which can cause painful sensitivity of the skin that makes it agonising to read Braille script or operate a Braille keyboard.



Students at the Royal National College testing programs on the Apple.

These difficulties apart, programming is an easier career for blind people to enter than most, as is unconsciously attested by the pathetically short list of departments at Hereford: computing, living skills, general studies, business studies (mostly clerical work), music and, of course, piano tuning. Anything that involves complex visual/motor skills or a lot of paperwork is out – which is most things when you start to think about it.

Computers, on the other hand, have lots of ways of talking to people that don't depend on eye-hand co-ordination, and what is more, a lot of programming can be done at home where the physical environment is familiar and all the special aids are to hand.

"Visually handicapped education has been looking for new outlets," says Woolfson, "and computing is a field in which a blind person with the right mental capabilities can work effectively."

The methods adopted at Hereford to help blind students talk to computers are often surprisingly simple. For one thing only 30%-40% of the 200 students are completely blind. The remainder are partially sighted.

For these students Woolfson has an enlarging CCTV system for displaying computer output and an enlarging photocopier. There are also five special VDU terminals displaying large, white-on-black characters in a 40-character X 12-line format.

These are usually quite expensive, but Woolfson, an economical Scot, persuaded a local electronics firm to customise standard terminals at cost price.

The same company, PMS Developments is now converting the same five VDUs to voice output at a total charge of £3,500, which is less than it usually costs for a single specially designed Hewlett-Packard or IBM talking terminal. The extra chips will do proper phoneme synthesis too – none of your speaking-clock rubbish.

For the totally blind students, the computer department has two Brailink terminals made by Clarke and Smith. These look exactly like screenless keyboard terminals in a suitcase, with a few extras.

One of the extras is a long strip of tiny raised pins arranged as a series of 6-pin cells which correspond to braille characters. Output cues from the computer appear as patterns of raised pins on the left of the strip. Keyboard commands appear as pin patterns on the right.

Impossible to discern from above, but Woolfson crouches at table height to demonstrate the flickering patterns of pins that translate through the fingertips into meaningful code.

The other feature of the Brailink terminal is a group of six red keys in the "home" position on the keyboard. These correspond to the six keys on manual Braille embossers which most students are already accustomed to using.

Many accomplished Braillists (that's what they call them) find it faster to use an embosser than a qwerty keyboard. "Compacted Braille is really a form of shorthand," says Woolfson, "so a good Braillist can be a lot faster than an average typist."

Braille is a major preoccupation for Woolfson at the moment. This is his second year at Hereford, where he founded the computer department, and like all teachers of the blind he has to pass his own Braille exams this year or leave.

"You have to be able to read Braille over a student's shoulder," he says casually.

He is also involved, as a member of a sub-committee of the UK Braille Authority, in trying to establish a standard form of computer Braille. This will allow none of the shorthand forms of contracted Braille. Every Braille character will equal one English character.

The numerals will be represented by borrowing some characters from contracted Braille so two or more characters will be combined to form special codes symbols like logical AND, and so forth. It will be slower than contracted Braille but far easier to implement on a computer.

As a personal project Woolfson has also written a couple of programs for translating contracted Braille into English and vice versa, of which he is justifiably proud.

The computer system at Hereford which uses all these exotic peripherals is in a state of flux at the moment. "We had two Apples when I arrived," says Woolfson, "and ran a Cobol course on them last year which was a nightmare."

The system is now based around a Zilog Z-Lab 20 eight-user minicomputer running under Zeus, which is a Unix-like operating system. "We've also got a Zenith 16-bit micro for its colour graphics and to act as a print server for the Braille printers. We've got a BBC Micro too, for what it's worth."

Woolfson is not a great fan of toy micros or of shapeless high-level languages. This year he is teaching via UCSD Pascal, which is embedded in the Zeus operating system.

Woolfson's aim on his courses is not to teach code but to give a sound basis in problem-solving and structured programming techniques. At the end of the course the students are topped up with a dose of a commercial language, but by then, Woolfson hopes, the foundations will be secure.

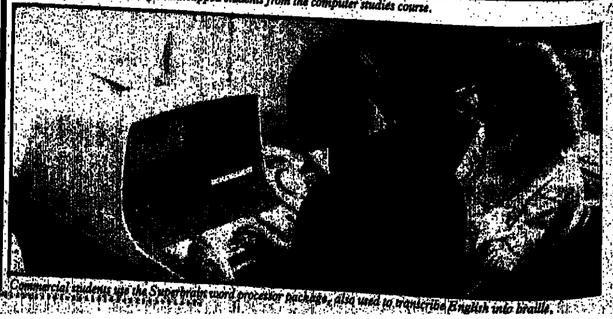
It's a marked contrast to the high pressure, forced feeding of superficial code management that is a feature of so many commercial courses, but does it work for the students?

After only one full year of operation it is too early to tell, but of the four students last year, one got a job before the courses ended, another totally blind student passed first time, and a third had a near miss and is now resitting.

There are certainly growing opportunities for blind programmers, and enlightened organisations like the Civil Service employ several, some in quite senior positions.

Woolfson tells a cheery story which is nice to end up on, of a senior engineer who went blind quite late in life and switched to programming. "I wish I'd known about this lark before," he said, "I've never earned so much money in my life."

Louis Woolfson and visually handicapped students from the computer studies course.



Commercial students use the Sweetbriar word processor package, also used to input the English into braille.

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People who run computer service companies have usually never been taught to manage, says David Blechner

Why many small turnkey firms are doomed to fail

THERE are literally dozens of small turnkey systems companies in the UK with great promise. But the majority of them will never realise their full potential. They will either continue to soldier on without making any real progress or join the swelling ranks of companies in liquidation.

It is a sad fact of life that though these companies are basically very capable, many will still fail to make the grade.

The most likely causes have their roots in three specific areas: the degree of technical expertise; the quality of management; and attention to marketing.

To succeed in the highly competitive UK market in computer turnkey systems, all three areas must be strong.

Few companies will fail through lack of technical expertise. Most British companies get full marks here, primarily because the company founders will largely have come from a technical background in software or engineering.

They will usually have proved themselves in their previous jobs and set out to market their expertise, working for themselves, rather than for their employers.

It is almost commonplace to say that we in Britain are technically innovative, so problems in this area are seldom terminal.

Unfortunately, no amount of technical expertise can make up for lack of management ability. It is a truism to say that the computing services industry in general is under-managed.

This is not surprising when one considers that the people who have to manage the company are usually the founders – the technocrats who have to roll up their sleeves and actually do the work.

They are dedicated people, working long hours, and like so many in other industries have never been taught to manage. Consequently, they have to pick it up as they go along, making life difficult for themselves, until in the end they are severely overworked.

If they survive the first few years, they will find that the company will grow in size and the style of management will come under increasing strain, not least of which will be the need to delegate responsibilities.

Here, the industry has only itself to blame. The British computing industry's attitude to training is abysmal. The computing services sector attracts young, ambitious people, who need strong motivation and leadership. It is vital to remember that it is not only high salaries that will retain their interest.

But perhaps the most dangerous flaw in the management area is a lack of appreciation of the need for constant monitoring of all aspects of the company's operations.

As a company grows it is judged by outsiders on its administrative and organisational abilities. Managers must ask themselves: Does correspondence get answered promptly? Are minutes kept of meetings and are telephone calls logged? Do invoices go out on time? Are they being paid? Is the bottom line being watched, as well as the turnover? And, importantly, do they have a true financial picture of the operation?

Ultimately, managers must co-ordinate and control both the technical and marketing aspects of the company. Let either slip from grasp and the company will fall flat on its face.

But the real Achilles Heel of the computer systems turnkey sector is that of marketing. Here we have a lot to learn from the US.

Marketing, as distinct from sales, is a vitally important activity which requires serious attention from senior management. It is a highly sensitive matter and, again, must be constantly monitored.

David Blechner is managing director of the Star Computing Group.

'Without management, no matter how technically innovative or competent the company and no matter how switched on it is to marketing, the organisation will flounder and eventually fade away'

The first step for any organisation should be to establish a sound marketing strategy. One must establish which marketplace one is to be active in, and whether one is going to position the company and its products as up, middle or down-market

Obviously, for a new company just starting out, it is hard to stick to the strategy because, being small, one is hungry for business and it is easy to be deflected on the promise of making sales.

It is important that the marketing strategy should be understood by everyone in the company and that they present a common concept and accurate picture to outsiders of the company's position in the market.

Marketing means spending money on company literature, public relations and advertising, all of which are complementary to each other.

Budgets will probably be limited – the majority of companies do not spend enough on marketing anyway – so it makes sense to spend initially on literature, for the quality of sales leaflets, product briefs, and so on, right up to corporate brochures has a bearing on the credibility of the company.

It is well worth investing in a good corporate brochure and if one has to make a choice of where to spend the budget, earmark a fair proportion for this.

As a small, new company, one is fighting for credibility. Potential customers will be asking themselves: "Isn't it dangerous to deal with such a small firm?"

A good corporate brochure can answer this, and many other questions, before they are even asked.

But keep a sense of proportion. One should not produce "glossies" for everything the company sells. Look hard at the use to which literature is to be put.

On the PR front, a good public relations consultancy is worth its weight in gold. At Star we put our faith in this element of marketing, but it is important that one does not expect overnight results. It can take many months before the impact of PR can be perceived.

For the first two years it was a case of slogging away at obtaining Press coverage, during which time every article published was greeted with cheers. But patience paid off and we built up from there to wide Press coverage, and even to radio interviews and TV appearances.

The bedrock of the campaigns that we have run over the years has centred on editorial and broadcast coverage – which we have found to be considerably more powerful than advertising – though it is a mistake to think that PR activity is confined to media relations.

Internal staff communications, newsletters to existing and potential customers, support at exhibitions, publicising seminars – these are just a few of the areas that also fall within the PR province, all of which we have used.

Although coming of age, PR still remains the poor relation to advertising where multinational companies spend six-figure budgets which would quickly cripple computer companies if they were to try to emulate the bigger organisations.

At Star we have found advertising especially useful in two main areas.

The first is corporate advertising, where we have worked mainly through trade publications seeking to convey our corporate philosophy. The second is where we have something special to tell existing and potential customers, such as announcing a new product or some form of special offer.

But it should be said that generally we – and other computing companies – have found advertising an expensive exercise and largely ineffective as a means of gathering sales leads. Its value lies in enhancing the credibility of the company.

I do agree, however, with the argument put forward by advertising agencies that if one is to go into advertising it has to be done properly.

The media has to be carefully selected and there is no point in stopping and starting the campaign at random. If you have only a few thousand pounds or so, forget it – it's a drop in the ocean. Advertising has an accumulative effect, so it must be a continual process.

One of the most effective marketing approaches we use at Star is that of organising seminars. This is a route that we now have down to a fine art and one which brings in very good sales leads.

The seminars are organised to run over a long lunch period so that guests are able to attend without taking too much out of their working day.

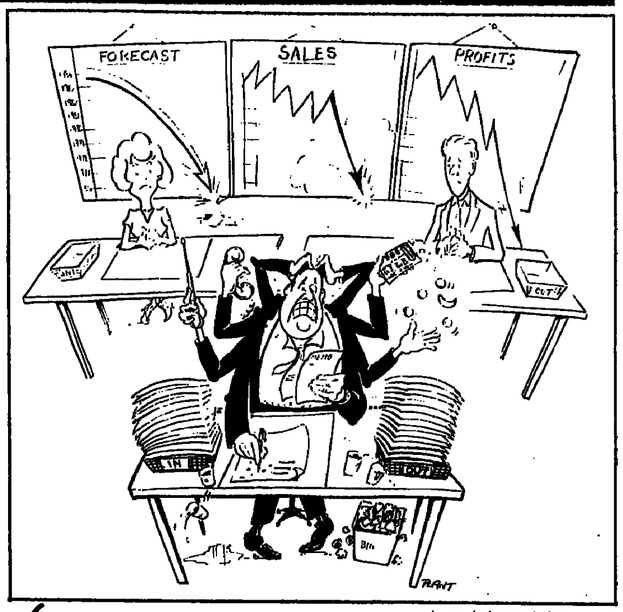
Here, success or failure depends on attention to detail. This means making sure invitations are issued in good time and that everyone invited is personally contacted by telephone to ask them to come along. Sometimes appointments and sales have been made even if the prospect has not been able to attend the seminar.

Make sure the company's best speakers make the presentations and that all guests and staff are identified with badges and provided with personalised seminar packs. And because it runs over a lunch period, put on a good buffet.

Last, but not least, the salesmen attending should make appointments with prospects before they leave the seminar.

I have drifted here into sales, which shows how the line between the two activities becomes blurred. Marketing deals with strategy, whereas sales deals with tactics.

Of the three ingredients for success in the computer turnkey systems industry, good management is vital. Without management, no matter how technically innovative or competent the company and no matter how switched on it is to marketing, the organisation will flounder and eventually fade away.



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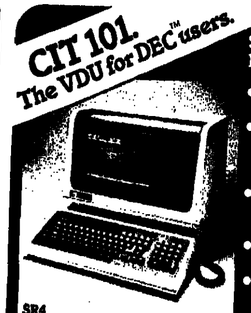

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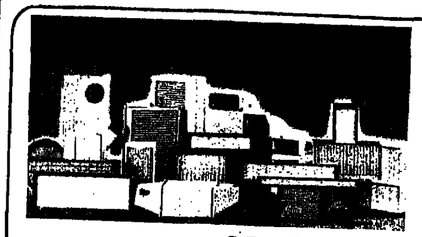

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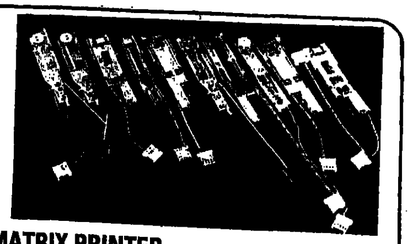

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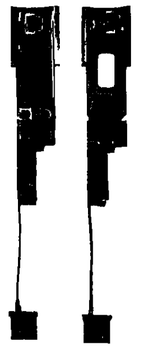

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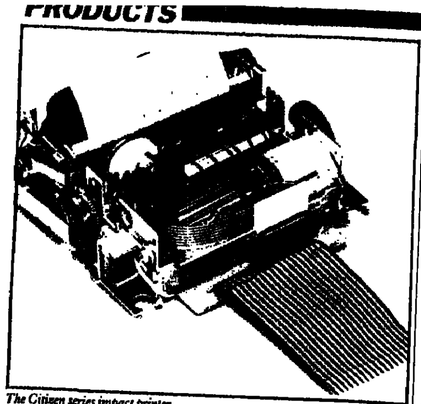

The Citizen series impact printer.

Citizen series launch

DATAC of Altrincham, has been appointed exclusive UK distributor for a new range of impact printers from Citizen, the 505 series.

The Citizen 555 and 575 models are respectively 24 and 40 column impact printers featuring red/black printing, a print speed of 2 and 1.2 lines per second, paper feed at five lines per second and 12V DC operation.

Interface boards and packaged versions of the 555 and 575 will be available shortly.

Datac (CW), Tudor Road, Altrincham, Cheshire, WA14 5TN.

Breakthrough in back-up for micros

WITH simultaneous announcements in the US and in Europe, Cipher Data Products has released details of a major innovation in mass storage for microcomputer and personal computer systems. The company's new 4in 20 Mbyte cartridge tape drive utilises a standard floppy disc interface and has the same "footprint" as a standard height 5¼in floppy disc drive.

Named the Cipher 525-CT FloppyTape, the availability of this new class of low-cost tape drive means that business micro and personal computer users can now add 20 Mbytes of Winchester back-up using a device which requires no special interface or enclosure; even the power requirements are the same as for a standard floppy disc drive.

With the 525-CT selling in OEM quantity at under $300, the eventual price to end users for complete Winchester back-up systems is likely to be significantly less than similar capacity systems on the market today, says Cipher.

Although physically a tape drive, the FloppyTape is electronically similar to a standard floppy disc drive. "The similarities to a floppy disc offer easy integration of the 525-CT by OEMs and system integrators," commented Michael A. Brown, managing director or Cipher Data Products (UK). "The unit is plug-compatible with any computer system using the widely accepted SA400 or SA850 interfaces. The 525-CT electronics emulate the interface of a floppy, thereby allowing existing floppy disc controllers, such as the Western Digital Series chip sets, to drive it without major changes to user operating procedures."

Cipher Data Products UK (CW), Compton Place, Surrey Avenue, Camberley, Surrey GU15 3DX. Tel.: 0276-682912.

The S5484 colour graphics unit.

Graphics from Sigma

LATEST addition by Sigma Electronic Systems to its 5000 Series of integrated workstations is the S5484, a high resolution colour graphics unit suited to CAD/CAM applications.

The S5484 is an ergonomically designed workstation, styled for office use, which incorporates Sigma's 5484 colour graphics generator, 20 inch colour monitor with contrast enhancement filter, and a detachable keyboard

The 1536 × 1024 resolution is said to provide a high quality definition picture, with colour selection available from a 4096 colour palette. The independent text store, which is additional to the pixel planes, allows four pages of text storage

Sigma Electronic Systems (CW), Sigma House, North Heath Lane, Horsham, West Sussex RH12 4UZ. Tel: (0403) 50445.

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Burroughs updates B90 business system range

BURROUGHS' Cumbernauld factory near Glasgow has updated the company's B90 business system range to produce the B96. The new machine extends the Scottish plant's worldwide responsibility for the business systems range.

Programs written under Burroughs' CMS operating system for the B80 can be run on any machine in the B90 range and moved up to the B1900 small mainframe and B900 minicomputers.

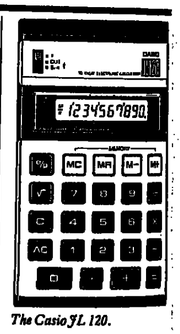
The B96 is half the size of its predecessor, the B94, but offers 50% more memory. The size reduction arises from the use of 64K memory chips — earlier models had 16K chips — and some repackaging to fit peripheral controllers on one board rather than two.

The processor, designed in Cumbernauld and built by Burroughs, is an eight-bit device with 24-bit addressing. Burroughs says it is designed specifically for Cobol programs and as such is faster than comparable machines from other leading suppliers.

Three models are available: the B96-20 has a built-in 20 Mbyte fixed disc, the B96-40 has a 40 Mbyte disc and the B96-80 has an 80 Mbyte unit. Memory can be expanded to 1.5 Mbytes. Extra discs can be added, taking the maximum storage on the top model to 300 Mbytes.

Minimum configurations, including a terminal and a printer, range from about £15,000 to £28,000.

Burroughs (CW), Heathrow House, Bath Road, Hounslow, Middx. TW5 9QL. Tel: 01-759 6522.



The Casio FL 120.

Calculator maker thinks big

CONTRARY to the trend towards calculator miniaturisation, Casio has designed the JL120 with generous proportions.

Keys are well spaced for ease and speed of operation, display is an easily legible size, and capacity is a larger than normal ten digits, says Casio.

It has the usual four functions (with constants on all four), square root, multi-function percent and fully independent memory.

Decimal options are floating, cut at two places or rounded (5/4). Automatic thousands punctuation is standard.

Casio Electronics Co (CW), Unit 6, 1000 North Circular Road, London NW2 7JD. Tel: 01-450 9131.

Protection for floppies

A NEW protective pack for floppy disc dispatch and storage has been developed by Costerwise.

The Floppipak is a slide and tray design made from white corrugated board lined with foil and Aircap bubble cushion material providing a measure of protection against magnetic fields.

The Floppipak has been specially designed to help overcome the problems of data corruption frequently experienced with handling and mailing of floppy discs.

Costerwise (CW), 16, Rabbit Row, London W8.

Dual purpose terminal

THE 2634J from Cifer Systems is a dual purpose terminal fulfilling both traditional Ascii and telex preparation functions. It can be set in either mode by depressing a single key.

In telex mode the screen is set to 69 columns instead of 80 columns, and the keyboard behaves like a standard telex keyboard, with all the appropriate function keys. The additional keys used when the terminal is online in Ascii mode are locked out and inoperative during telex preparation.

Cifer Systems (CW), Avro Way, Bowerhill, Melksham, Wilts.

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Network Operator

c£7,000 inc.+benefits

INTERNATIONAL COMMODITIES CLEARING HOUSE is a unique organisation providing clearing and guaranteeing services for its members, mainly brokers trading on the Commodity Markets. Backed by a highly sophisticated computer system, the company has enjoyed tremendous growth in recent years.

The current hardware configuration comprises 3 X IBM 4341's, providing a real-time system under VM/370, DOS/VSE POWER/VSE and making extensive use of CICS/VS. The operation supports a network of over 450 VDUs and teleprinters, which will continue to expand as more terminals are installed in clients' premises. Racal Milgo 4800 bps modems are used extensively throughout the network, and ITT 3809 front-end processors have recently been installed. Network Management Systems are being evaluated to incorporate current, and provide additional, diagnostic capability.

The recent expansion of network services has created a vacancy for a bright, young operations professional to join an experienced network team. Candidates will have spent at least two years working in a large IBM installation and should demonstrate a sound knowledge of DOS/VSE and CICS/VS. This opportunity is ideal for those anxious to work in a progressive, large machine environment, but who currently feel they are unable to progress. ICCH provides excellent training facilities and is committed to promotion from within based on an individual's ability.

A two shift system is in operation. Fringe benefits include Non-Contributory Pension Scheme, Staff Loans, Subsidised Lunch Facilities, Interest Free Loans for Season Tickets, Four Weeks Holiday, Sports and Social Club, and later you may qualify for a Mortgage Subsidy.

Contact Ref MT/700 for further details and immediate appointment for interview.

ICCH

Project Leader

MANUFACTURING SYSTEMS to £12,750

Our client, Coca Cola Southern Bottlers, is one of the biggest manufacturers of soft drinks in the UK. The name Coca Cola is synonymous with success. Why not become part of this formula and *LEAD* a team developing one of the most sophisticated manufacturing systems to be found in industry?

Central processing facilities are based on new DEC VAX hardware with a countrywide communications network linking 24 depots and 3 factories. It is a highly ambitious development programme that will culminate in the implementation of a fully integrated manufacturing system to include Buying, Production Planning, Recipe Control, Load Scheduling, Stock Allocation and Vehicle Routing. To ensure the success of the project, the company intend recruiting a talented Project Leader with the right blend of technical and commercial business skills.

Applicants will have a background in production control and have played a senior role in the development cycle of a major system. You will be able to communicate effectively and inspire and motivate a team of hard working professionals. Fundamentally it will give you the chance to bring your creative flair into an environment committed to the use of advanced computing techniques

Head office is in Sunbury-on-Thames, Middlesex, but the nature of the job will demand some travel within the UK. The starting salary is highly competitive and the usual large company benefits, including Assistance with Relocation and BUPA, will apply. To find out more about this outstanding opportunity and to arrange immediate interviews contact ref DMJ/800 without delay

Coca-Cola

Programmer/Analyst

COBOL to £10,000

The expression 'small is beautiful' is certainly appropriate when considering this opportunity. Provided you can use the latest in hardware/software technology, working in a small unit will give you far greater experience, considerably broaden your professional skills and allow you the chance to make a positive contribution.

HARP HEATING is a young, dynamic organisation who have grown into Britain's largest, independently owned installer of domestic central heating. They recognise computing as fundamental to continued business success and are currently investing in the development of new, on-line systems.

To cope with this expansion of computing facilities, the company require an additional Programmer/Analyst.

Experience of COBOL (hardware background irrelevant) is essential and ideally you will have some knowledge of systems design. Personality is important and it is anticipated that you will be young, ambitious and able to work with the minimum of supervision.

The company are housed in pleasant modern offices in BROMLEY on the London/Kent borders. It's close proximity to motorway networks and public transport makes it a very convenient location.

If you are looking for a challenge in a job providing excellent long-term prospects then contact us without delay. Quote REF MJ/900 for further information and immediate appointment for interview.

HARP HEATING

Senior Programmer/Analyst

DEC/COBOL Gloucester (£ neg)

Renowned individually for the excellence of their vast product ranges, the amalgamation of Birds Eye and Walls has without doubt created the UK's most formidable and successful manufacturer of high-quality foodstuffs.

Computing maintains a strong presence in almost every sector of business activity and in order to develop a fully integrated Administrative System. The company has made a significant investment in distributive processing based on DEC VAX 11/780's. The communications network extends countrywide and the system is now fundamental to the efficient control of what is a high volume and fast moving business. Additional mainframe facilities are currently processing a diverse range of major commercial applications. It is an impressive operation and one that will continue to keep pace with demand.

Supporting the distributive systems is a vital function and it is in this area that the organisation intend recruiting an experienced Senior Programmer/Analyst. Candidates, with a good academic record, should have at least 2 years Cobol Programming experience with a DEC environment. You will have been involved with the implementation of new systems and be able to demonstrate some experience in the area of system design. Maturity, reliability and initiative are all essential qualities together with the confidence to fit into a demanding and highly challenging environment.

The position is based in Gloucester and it is expected that you will be currently living within a commutable distance of this very attractive location. Shift working is operable.

The starting salary is competitive and will reflect your experience and ability to make a positive contribution. Fringe benefits are those you would expect from a company of this stature. In addition to the technical attractions of the position the company offer first class career prospects. For further information about this exciting opportunity and all necessary interview arrangements contact Ref MJ/901 without delay.

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To find out more call the advising consultant, Robin de Rouen, on 01-637 9611.

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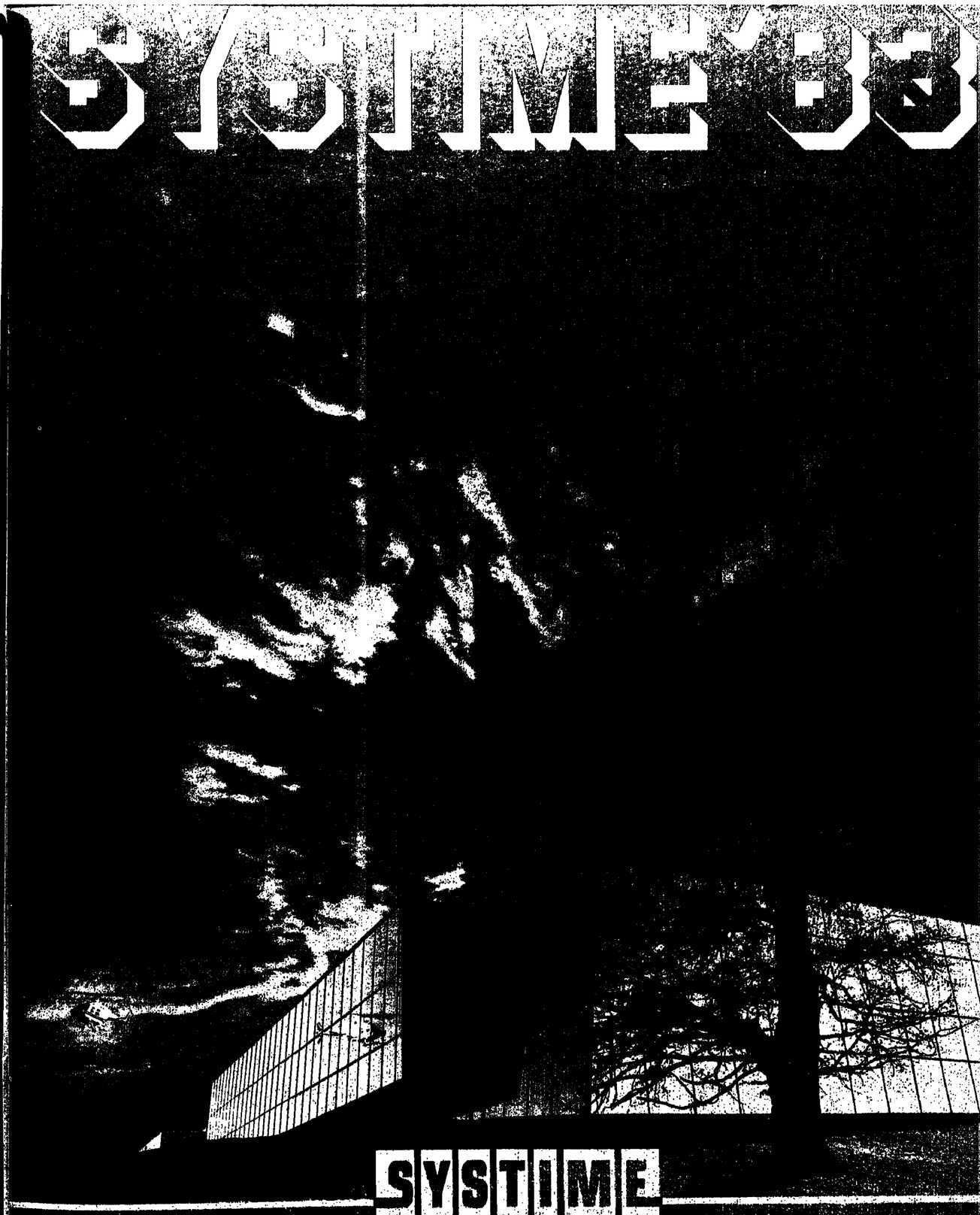
SYSTIME '83



SYSTIME

S SERIES builds on one of the most successful British computer systems ever designed

INTRODUCING Systime's latest developments in the S Series managing director, John Gow, reveals that further expansions of the range are to be announced later this year.

Systime's S Series product range has been designed to produce a range of compatible hardware/software products which span the requirements of today's small business system.

The S Series incorporates into its design all the latest features of VLSI Micro Technology and disc storage media. There are three members of the S Series family currently available. These are:–

S 300 – A 16 bit desk top based multi-user system for use with up to 5 Terminals using Standard CP/M/MP/M Operating Systems.

The system can either incorporate floppy disk or a 5¼" Winchester drive.

We believe that the S 300 is the most competitively priced multi-user system available today.

S 500 – Available in table top or free standing configurations, this can be accessed by up to 9 terminals simultaneously using Standard CPM/MPM Operating Software or using MPS – Systime's own real time executive designed specifically for the S Series range and incorporating features normally associated with large mini-operating systems.

The system incorporates a wide range of disks. In the minimum configuration floppies are used, larger systems include multiples of 13Mb or 39 Mb drive units.

The system is capable of communicating with other manufacturer's ranges.

S 2000 – The S 2000 can simultaneously deal with 13 terminals and offers a larger range of disks. It is essentially a free standing compact machine which will operate in a normal office environment at very low noise levels.

Disks available include 67Mb removeable cartridges and 134Mb Winchester. Industry standard and streamer tapes are available with the system.

One specific member of the S 2000 Series has been designed as the host processor for office automation systems and can be used as a node in a much larger integrated system.

All systems in the current S Series range are designed to operate in normal office environments. See table below.

The S Series processor is based on the Intel 8086 chip set with the S500 and S2000 also incorporating a 64 bit floating point unit as standard.

The initial Model in the S Series range, the S500 was released in September 1981 and to date over 800 units have been delivered. The system has proved extremely reliable in operation.

Each member of the S Series is housed in an ergonomically designed cabinet which has inherent built-in expansion capability, for example, the basic S300 unit comes complete with all the interface capability to implement 5 terminals. The only incremental cost of expansion are the terminals themselves.

MPS, the operating system specifically designed for the S Series processor, provides most facilities found in the operating system of large minicomputers and enable programmes to be written in the following languages:–

BASIC-500 (A RSTS BASIC PLUS like-language)
CIS COBOL
FORTRAN V
PASCAL
PLM – Native mode language

To date the processor has not only been used as the heart of small business systems, but has been incorporated into other areas including military systems, graphics CAD/CAM systems and front end processor/communications systems. Its performance in technical applications such as graphics developed in PORTRAN is stated to be comparable with a PDP 11/44 processor.

Further models in the S Series range are currently under development. These include faster processors for S 500 and S 2000 ranges. A major expansion of the range upwards will be announced mid-1983 which will enable substantially more memory, terminals and disc capacity to be supported.

Model	Memory Min Max	Max No Terminals	Line Printers	Disc Min Max	Tape	Comm Channel	Price Range £k
S 300	256K 1Mb	5	0	1Mb 9Mb	0	2	3.2-10
S 500	256K 1Mb	9	2	2Mb 156Mb	0	2	6.7-25
S 2000	512K 1Mb	13	2	67Mb 536Mb	2	2	16.5-40

Commercial application packages available running under MPS operating software include:–

General Business Software
- UTOPIA
  A system incorporating integrated Order Processing, Sales Ledger, Purchase Ledger, Nominal Ledger, Stock Control and Payroll.

Professional Systems
- SOLICITORS
- INSURANCE BROKERS
- TRAVEL AGENTS
- ESTATE AGENTS
- ACCOUNTANTS
- DENTISTS
- PROPERTY MANAGEMENT

Office Automation Systems
- WORD 500
  Word Processing
- VIEWDATA – COMPUTEX 500
- MAIL 500
  Electronic Mail
- SYSCALE
  Speed Sheet Processing

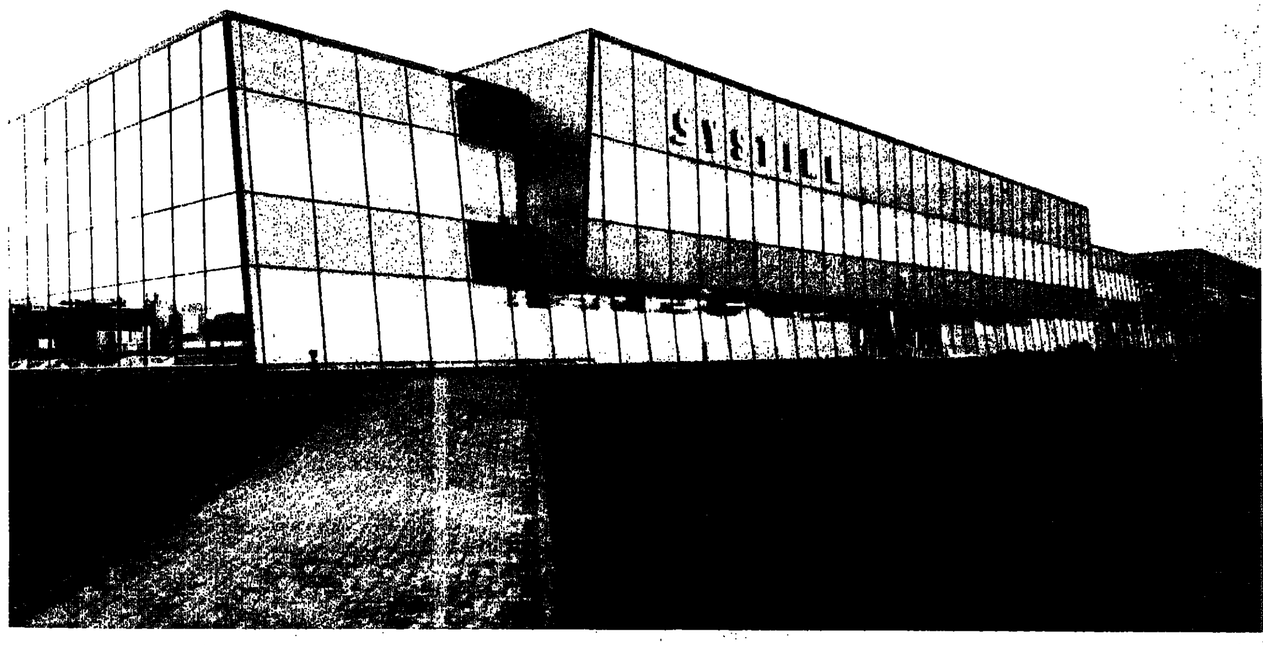
Manufacturing Systems
- MAN 500 – a production control system
- JOBMAN – a job costing system

Retail and Distribution
- CASH AND CARRY POS system
- REDIS – a control system for retail stores
- AUTOMAN – a system for automotive dealers
- S-HOTEL – a system for small/medium hotels

In the one year that the S Series has been available in the form of the S 500 it has already demonstrated that it is one of the most successful British designed and manufactured computer systems. The latest S 500 and S 2000 models will considerably accelerate the numbers of S Series units installed.

SYSTIME MOVE INTO NEW £20m HQ

Europe's most modern manufacturing complex



BRITAIN'S biggest manufacturer of turnkey computer systems, Systime, will complete the move into its new headquarters and factory within the next few weeks. All production departments made the move to Millshaw Park, Leeds, last October and, with the handover of the final phase of the building just before Christmas, the remaining sections and administration are expected to be established there by mid-February.

The 26 acre site of this 350,000 sq. ft. high technology factory, which is acknowledged as a unique concept in British industrial architecture, has immediate access from the South Leeds Ring Road. Less than one mile away is the M621 motorway link providing rapid access to both the M62 and M1 motorways. The Leeds/Bradford airport is within thirty minutes travelling time by road.

In addition to the factory, offices and warehousing, which together will give employment to about 1,300 people, the development provides access roads, service areas, car parking and landscaping. The complex has been located on the site to take advantage of the natural ground contours which, together with the landscaping, will make maximum visual impact.

The scheme will demonstrate to customers, visitors, and all concerned with the computer industry that Systime is, and intends to expand as, one of the leading companies in the international field.

The overall plan is implemented not only to be effective in 1983 but to be capable of easily accommodating new technology in work environments throughout the 1980's, and 1990's and beyond with the minimum disruption and cost.

It is Systime's intention to be one of the leading international manufacturers of such new technology and, to that end, the company is installing in the new complex a fully integrated Corporate Information System.

This will provide appropriate personnel with simple work-station based access via Systime terminals to an Ethernet system providing electronic mail, word processing, Viewdata/Prestel facilities, telex interfacing and data communication via voice or data links.

The design of the building will permit a further single storey section to be added at a later date. This section will match the manufacturing section structure and will run parallel to it on the west side of the complex. This will increase the total floor area to approximately 500,000 sq. ft. which will support a total workforce of 1,800 to 2,000 employees.

The complex is basically an L-shaped design with one section on two levels and the manufacturing area all on a single level forming the upright of the L-shape. The manufacturing area joins the two level sections at a height of the second level. Because of the site contour the far end of the manufacturing area is at ground level.

Initially, the floor space available is 350,000 sq. ft. The majority of the interior will be open-plan where possible, using interior "landscaping" based on modular furniture systems, plants and trees.

The manufacturing area interior layout has been designed to optimise the physical and logical flow of Systime's computer system manufacturing processes. Goods Inwards is located at the ground level end of the area. All items comprising components, sub-assemblies, plastics and metalwork bought-in peripherals and media enter into a bulk incoming goods store from where they are distributed to the appropriate store area on the eastern side. Quality assurance, testing and peripheral inspection are located next to goods inwards. At the main building end of the manufacturing are located printed circuit boards, cable and module assembly areas with in-flow test and inspection stations.

Adjacent to the latter areas are power supply, keyboard and peripheral assembly areas. Between these areas and the main systems assembly section are peripheral soak-test stations. The main systems assembly area runs back down the entire western side of the manufacturing area. At the end of main systems assembly are the bulk finished goods store, packing despatch and goods outwards. The print shop is also located at this end of the manufacturing area.

The ground floor of the two storey section comprises the following departments:

North-East Region Sales, Software, Field Engineering Support.
Main reception with an exhibition area, demonstration suite, lecture theatre, conference and interview rooms.
Marketing, Training and Central Software Support.
Finance, Administration and Personnel.
OEM Central
Field Engineering Central Operations

The upper floor section comprises Dining Room, Kitchen and Servery.
Production Administration and Engineering Services.
Research and Development suite comprising:
Administration
Software and Hardware Depts
Service area, Special Products and Prototypes
Drawing Office

Systime's application of production technology

PRINTED circuit board design, build and test is the key to Systime's manufacturing activity.

Five years ago the application of flow soldering to Systime's existing board production facilities seemed a major step forward. A year later component carousels and projects were added which are now being replaced by a fully-automatic component inserter. Three years ago Systime fitted their first semi automatic chip inserter, two years later they fitted a second. Both machines will be shortly replaced by a fully automatic inserter as board volumes increase to justify the high capital cost of such mechanisation. By the middle of 1982 30 operators were producing 400 boards per week, scheduled to rise to 600 boards per week by mid 83. Such volumes obviously demand automatic testing and the 4 year old functional tester has recently been supplemented by a Gen Rad 2272, a very powerful in circuit tester. The investment in PCB production has been more than £¼m investment.

The pace of investment continues to accelerate; the 3 year old C.A.D. system used to design printed circuit boards is about to be supplemented by a multi-terminal system with 6 times the potential output, better suited for today's dense 6 layer boards. This is a further £¼m investment.

The final item to connect these production cells together remains the material handling system. The wide range of boards produced (75 types) demands flexibility so a robot tug system is being designed which will be directed from the central planning computer to move goods between cells.

Within the next 2 years the area of boards handled per week will stabilise, at least temporarily, as semi-custom L.S.I. takes the place of large numbers of chips. (Systimes first design is already in use for their V.D.U.). Yet again further major investment, into C.A.D. of VLSI and the computer simulation of the logic involved will be necessary to make a success of the new technology. Prototype p.c.b. production plant is under consideration for 1984.

The assembly of the printed circuit boards into computers and peripherals appears conventional but a number of trends are clear. The simplification of designs and introduction of standard fixing parts and air tools to drive standardised screws and rivets has raised assembly productivity by 20% over the last year.

Design simplification is aided by Systime's ability to produce all its own frames, brackets and cabinets.

Over the last two years Systime have designed, built and installed major structural foam moulding facilities, of 6 presses handling 25 moulds. The move to P.U. for cabinets and some structural components has eliminated many assembly operations, fixing components, bending, welding and grinding operations yet produced more aesthetically pleasing designs. A large number of metal components still remain; these are now produced on a computer controlled high speed punch and N.C. controlled folding machines followed where necessary with M.I.G./T.I.G. welding finished by grinding and hand spraying.

Future moves will be to injection moulding, to reduce cycle times and the number of fixing parts required, to robot paint spraying to reduce labour, plating to reduce labour and improve appearance, spot welding and riveting to reduce costs.

OEM SALES DIVISION SYSTIME. Back Row L to R: Steve Billige, Graham Strand, Roger Deakin, David Watt, Jane Rising, Barry Monaghan. Front Row L to R: Mike Briercliffe, Keith Hutton, Margaret Jackson

OEM sales given key role in strategic plan

New OEM markets are being energetically explored by Systime's recently enlarged OEM Sales Division, Mike Briercliffe, who took over as OEM Director last October, here sets the scene for this important growth sector.

EVERYONE in the computer industry knows that the term "OEM" has become thoroughly corrupted in recent years. It is now mostly used to describe the supply of computer hardware, and sometimes software, to organisations which then provide a system to the end-user, usually with value-added.

But there are, in fact, so many different types of OEM customer that it is reasonable to say, from the manufacturer's point of view, that an OEM market can be taken to mean any which does not involve direct sales to end users.

As it happens, an important feature of Systime's planned expansion of OEM markets will take us back to selling more to original equipment manufacturers which was, of course, how the term first came into use. Our OEM strategy certainly envisages Systime products, both hardware and software, being incorporated by the big international manufacturers in their computer systems.

Other major OEM markets are likely to be developed by supplying those large corporations, in both the public and private sectors, which are now marketing equipment to the computer divisions within their own organisations. There are obvious advantages in taking such equipment from one supplier like Systime. Not only does such a policy allow the number and quality of the machines to be controlled but the price factor, too, will be decisive in those situations. Additionally, it seems reasonable to expect that some British multinationals and public corporations will prefer to buy from Systime instead of a foreign supplier.

The development of our S series micro-based business system means that we are also increasingly interested in selling smaller systems through a dealer network and this, of course, requires a different approach from our customary system house activity.

The S series is designed to utilise hundreds of applications written for the widely used CP/M and MP/M operating systems and established micro dealers will, therefore, be able to market a range of compatible computers starting in the micro price bracket and ending in the multi terminal market in which Systime has always been strong.

There is no doubt at all about the scope now offered by OEM markets. But quite apart from the marketing opportunities which can be seen to exist OEM offers the additional attraction of not requiring a large sales force. So, with the cost of sales increasing as unit manufacturing costs go down, the expansion of Systime's OEM is obviously going to play an important part in the company's future strategy.

New agencies will boost overseas expansion

WITH Systime subsidiary companies already well established in South Africa, Holland, Eire, the Gulf and in France a further phase of overseas expansion is being planned through the appointment of more agencies in selected territories. This has proved to be a highly successful method of penetrating new overseas markets and Systime agencies are now operating in Sri Lanka, Singapore, Nigeria, Syria, Italy, Hong Kong and in Sweden.

"The company's immediate target," says John Arnold, Director of Systime's General International Area, "is to establish further agencies in Africa and others in Australia, the Caribbean, Denmark, Norway and Switzerland."

A further overseas expansion is currently being negotiated in China where the possibilities of sharing in a manufacturing venture are being explored.

This will clearly rank as a special kind of overseas development for Systime. Another is our subsidiary in India where we have over 40 R & D staff located in the Santa Cruz Electronic Export Processing Zone in Bombay.

Systime's technical staff in India have been recruited locally where there is a generous supply of highly qualified talent and are engaged mainly in writing applications software for customers in the Middle East as well as for the home company.

In the territories where Systime has established operating subsidiaries the company's policy has been to develop local organisations similar in character to the UK management structure. This enables the company to offer overseas customers the identical turnkey business solutions, including hardware, software and maintenance, which are available to customers in the UK.

Each of Systime's overseas establishments is controlled by a general manager with hardware sales, software, field service and administrative executives reporting to him.

The UK-based International Operations Division under general manager, Peter Wilkinson, and deputy, Rex Andrews, provides a round-the-clock liaison with all overseas subsidiaries and executive meetings are held locally or in the UK every month.

Systime's overseas operations, based on Leeds, now totals 165. South Africa is easily the biggest establishment with a staff of 87, Holland has 31, Eire 17, the Gulf 14 and France 8.

"The big advantage Systime has in all these overseas locations is that we have fully qualified technical staff on the spot. That has been particularly important in the Middle East and in South Africa where it has enabled us to pick up some import based operations staff, excluding sales, executives."

New computer development for cash and carry

A UNIQUE in-store system which has been developed by Systime for the cash and carry trade has found immediate popularity with leading groups throughout Britain. The system ensures that check-outs will be capable of operating at all times without the need for expensive intelligent tills. Utilising special twin computers, linked so that in the rare event of one failing the second automatically keeps the tills operating, the system is capable of operating up to 20 tills with price look-up for as many as 20,000 products.

Systime's cash and carry system provides the customer with a full description invoice instead of the customery till receipt. The invoice displays the customer's name and address, the date, the time, full description of each line bought, VAT & recommended retail selling prices.

Users of this new cash and carry system say that the change they have made from till roll to descriptive invoice has helped to increase their sales – in some cases by as much as 15 to 20 per cent. The descriptive invoice reduces queries, simplifies returns, aids security, carries up to the minute promotion messages to boost sales and simplifies audit.

A special feature of the system is the Micropos till which is robust and easy to use. Most operators need only fifteen minutes training and the computer will allow the company to run one till in a training mode without affecting the stored data in any way.

This unique in-store system can be installed as a stand-alone electronic point of sale system which can then be expanded by adding a host computer and extra terminals. This extra computing power will provide access to purchasing records, detailed customer records, comprehensive management reports and ledgers.

Systime's C & C system also incorporates comprehensive reports on stock, stock valuation, total sales, promotion sales, top selling lines, sales and contribution by product category.

Allied to these valuable management reports are facilities for selective mail outs to help generate new business and customer records to show the profitability of customers and their spending patterns.

Systime's specially designed till for the cash and carry trade – MICROPOS IV – prints a full description invoice at each check-out. It can be supplied with or without cash drawer.

MENSA CHOOSE A COMPUTER

Top brains call in Systime

BRITISH headquarters of Mensa, the exclusive society for the highly intelligent, has installed a Systime S500 computer to handle the work generated by its growing membership and other administrative operations.

Present membership of British Mensa is 8,300 and, says Chief Executive Mr Harold Gale, it is increasing by between 2,500 and 4,000 each year.

"If that is maintained we shall soon be dominating the international scene."

Mensa's computer, which is located at Wolverhampton, has 28 Megabytes of memory, providing 28 million characters of information, and in addition to the basic requirements of British Mensa it will be employed on work required for the one thousand international members in 80 different countries as well as servicing the international board of directors.

Mr Clive Sinclair, chairman of British Mensa, whose Cambridge-based company is the world's biggest producer of personal micro-computers comments: "We are delighted that Systime, as a successful British company, could supply exactly the computer equipment we needed."

Computer for medium sized firms

COMBINING low cost with high performance Systime recently extended their 8000 series of 32-bit computers with the introduction of the 8730 processor.

The new model, which fits in at the low end of the 8000 series, based on the Digital Equipment VAX processor, provides extra functionality to enhance performance and reduce the cost of expansion.

The 8730 can address up to 5 Mbytes of memory and support up to 2048 Mbytes of disk. Its low power consumption and heat dissipation make it suitable for siting in an office environment. A typical 8730 system is housed in a 56 x 21 inch cabinet designed to facilitate operation, servicing and access to all user peripherals.

Describing the 8730 Mark Woolton, technical consultant on the series 8000 development, says: "It supports up to 25 terminals using Systel, the company's revolutionary transaction processing system, and provides a cost effective solution to commercial applications for medium-sized firms.

"On the non-commercial side the 8730 is an ideal vehicle for solving scientific and engineering applications, especially if the optional floating point accelerator is included in the configuration."

Prices for the 8730 start at £31,000 and extend up to £200,000 for the 8780.

SYSTIME AT THE COMMONS

THE contract to computerise the handling of the MP's salaries, allowances and pensions has been awarded to Systime. The company will supply a Systime 8700 minicomputer plus 512 Kbytes of memory, two disk drives, two printers and 14 terminals running under the RSTS/E operating system. Software applications will be implemented by Systime progressively over the next two years.

The new system, which replaces NCR 299 machines, was procured through the government's Central Computer and Telecommunications Agency in accordance with Common Market and international trade rules. The contract, worth over £300,000 is Systime's second major order from the commons. Last August the Serjeant at Arms Department, which is responsible for security, ceremonial and housekeeping functions, installed a Systime word processor.

Leyland's Black Box link Systime with IBM

OVER one hundred Systime S500 computers, worth in excess of £600,000, are being installed by the distributors of Leyland Parts, a division of BL subsidiary, Leyland Vehicles Limited.

This major reorganisation of Leyland Parts' computer-based facilities available to distributors, which is expected to be completed by mid-1984, marks the culmination of a new development in computer technology.

Leyland Parts are substantial users of computer equipment to cope with the stocks of £100 million worth of spare parts for commercial vehicles which represent 150,000 different part numbers. At its base in Chorley, Lancs, 10,000 order lines and 700 goods receipts are processed every day. This huge replacement parts business, operating as Multipart, has approximately 700 distributors worldwide, 2,500 suppliers and employs 1,350 people.

Leyland Parts' systems manager Geoff Allen, who has worked closely with Systime engineers on the new development, says: "Three years ago we started a programme to install on-line teletype computer terminals into all our distributor parts departments. These terminals enable the distributor to enquire directly of certain data bases held on our large IBM mainframe computer at Chorley.

"This facility, called CAT (Computer Action Terminal), enables Leyland parts to ensure that VOR (vehicle off the road) orders placed by 11.30a.m. will be delivered the next day anywhere in the UK and in some cases delivery can be made the same day. It is a level of service which is vital to the end users, truck or bus operators for instance, for whom a day off the road could cost a substantial amount of money".

The system now being developed by Leyland Parts enables distributers using the Systime S500 to communicate fully with the existing IBM 3031 AP mainframe and/o the new IBM 3083 soon to b installed.

The method of achieving communication means that m more information which is alre held on the central computer can easily made available to the di buter network. This will inc such material as technical infor tion, vehicle status and warr data.

The additional attraction is t the Systime S500 can work as stand-alone computer in its o right and is able to run business plications based on a package c VISA (covering Vehicle sales re port; Inventory control; Service support and Accountancy applica tions) which has been jointly dev loped by Leyland Parts and Systi

Says Geoff Allen: "The ini problem was to find a means of co necting the Systime S500 to the IB mainframe to work interactive and, in addition, to have the capab ity for batch transmissions of da Several possible solutions we looked at but rejected for cost, cap bility or for technical reasons. Th problem was solved with the deve ery of a "black box" called a protoc convertor.

"The box, which is called Do lynx, is made by Local Data of Fr rance, California and distributed Interlekt Electronics of Reading successfully converts the protoc coming out of the Systime comput to look like the protocol going in the IBM mainframe".

Commenting on the S500 Geo Allen says: "This is by far the mo expandable machine we have ev luated in terms of our future plans enables existing software inv tment to be preserved and it is a available at a price performan which is quite outstanding. It is completely manufactured in the UK Systime, a not inconsiderable fac where the relationship between Ley land Parts and Systime is concerned.

"To our knowledge this approach of integrating interactive communication capability with stand alone processing, all run under the regis the native operating system on the micro computer, is unique.

"It is planned to install in excess of 100 such machines in the next 9 months worldwide. With an eye to the future we shall hopefully be able to integrate new technologies into the same basic unit. For example, the possibility of Viewdata on the same micro from a private viewdata base on the mainframe has its attractions as does the possibility of integration with optical discs.

"These could be used for such work such as marketing bulletins and dynamic images to illustrate, for example, the method of servicing components. Exploded diagrams of components and vehicles could be further application when graphics are available on the system. These and many more ideas are currently being investigated."

Control systems for the factory

TWO new important additions to Systime's software for manufacturing industry are Man500 & Jobman.

Man500 – is an effective low-cost solution for smaller companies seeking manufacturing control without getting involved in the complexities of MRP and WIP control. Designed to operate on the S500, Man500 comprises Parts Master File, Stock Control, Bills of Materials, Production Operations, Production Costing and Purchase and Works Orders. A comprehensive report generating facility is also included, providing complete user flexibility. For low cost, Man500 provides the smaller manufacturer with a useful management tool to help control costs, optimise inventory levels, increase productivity and provide fast, accurate management information.

Jobman – provides a practical solution to job shop control and is of significance to any company which needs to book resources and build up costs against any type of job or task. Jobman monitors the progress and costs of work in a job-shop environment; job status and cost build-up can be easily reviewed and profitability assessed by cost variance analysis. The full Jobman system is comprehensive and comprises; Job Ledger, Labour Bookings, Stock Control, Purchasing, Contracting, Shop Load analysis and full report generating facility. Interfaces are optionally available to link Jobman into the standard ledgers and payroll.

See it at THE WHICH COMPUTER? SHOW STAND 533

AUTOLINK – for the small motor dealer

SYSTIME were one of the first companies to design a computer system specifically to meet the needs of the automotive trade. AUTOLINK is based on the company's proven automotive systems but is designed to fulfil the needs of the smaller motor dealer. The system incorporates Systime's revolutionary new small business computer, the S500. Apart from being a uniquely powerful and versatile micro the S500 is very reasonably priced and brings what is a very comprehensive system well within the range of the smallest dealers. The software has three main elements; parts sales and stock control; vehicle sales and accounting. It is interactive and totally compatible with all Systime's range of computers.

Parts – The parts module gives total control over sales and stock of parts. Every sale is pre-checked for credit-worthiness and the computer adjusts stock levels and sales statistics producing a constant update on stock. Invoices or advice notes may be produced at point-of-sale for cash or credit and all prices and discounts are automatically applied according to the type of customer, sale and part. Daily management reports are also produced which show the current situation on sales, cost of sales, lost sales and stock discrepancies.

Vehicle Sales – The vehicle sales package provides a complete record of every new and used car passing through the business. Apart from automatic month-end printouts and complete reports on all cars sold during the month the system maintains and calculates VAT records on used vehicles. It has the added advantage of allowing comprehensive marketing from sales follow-up based on customer records.

Accounting – The accounting module of AUTOLINK covers both sales and general accounting. The sales accounting, covered under the previous sections on parts, and vehicle sales, provides numerous benefits and safeguards and management statements together with a list of aged balances, give total credit control to management. The system also covers all general accounting procedures, trial balances and profit and loss statements as well as full financial statements, along with purchase ledger accounting, remittance advice notes, credit transfers and cheque printing.

S SERIES: "MORE THAN JUST ANOTHER MINICOMPUTER"

Research and Development Director, Ian McNeill, describes the salient features of Systime's major contribution to computer development:

THE S SERIES

THE S Series of computers is designed to embody the very latest in micro-processor VLSI technology, reducing the number of printed circuit cards full of electronics, and thereby increasing the reliability of the computer as a whole. The micro-processor which lies at the heart of the S Series machines is the 16-bit Intel 8086, complemented by many other 16-bit micro-processors present on intelligent interface cards thereby relieving the load of peripheral handling from the main CPU.

The CPU card is one of the most powerful single board computers available anywhere in the world. As well as containing all the supporting logic for the 8086, the board contains the 8087 Numeric Data Processor which operates as a co-processor to the 8086 to provide 80-bit accuracy floating point instructions. Up to 32K bytes of EPROM are provided on the board to handle two major functions, firstly the bootstrap and initialisation functions to load the operating software from any of the supported disc devices, and secondly a complete suite of first level diagnostics to enable first level testing of the machine, making full use of the on-board diagnostics available with each intelligent peripheral controller. An interface is provided to the console terminal device by way of the RS232C port, a line frequency clock is provided for all timer functions in the operating system, and the Master Programmable Interrupt Controller is also housed on the board. And, to provide maximum speed and minimum impact on the connecting Multibus* backplane, 256K bytes of high speed RAM memory are also housed on the board. Series 2000 machines incorporate high speed memory and a processor running 60% faster than Series 500 machines.

Expansion memory for the S Series is provided in 256 K byte increments, with a maximum of 1 M byte of high speed RAM on a single printed circuit board using 64 Kbit dynamic RAMs.

For floppy disc based systems the disc controller card is used to provide support for up to four double sided, double density floppy discs providing 1 M byte of storage each. This card also houses four RS232C terminal interface ports which may be used for terminal connection or serial printing devices (or indeed any other serial device).

For hard disc based systems the micro-processor based high speed error-correcting disc controller is used to provide support for up to eight logical disc devices. These devices are of the SMD (Storage Module Drive) interface standard. On the Series 500 the 'Lark' drive is used, providing 6.6 Mbyte of fixed storage and 6.6 Mbyte of removable storage on an 8" cartridge, the first of its type in the world. This drive is also offered in a triple density version providing nearly 40 Mbytes of storage, half of this removable. On the Series 2000 the disc devices offered are the FSD's (Fixed Small Drive) providing 128 Mbytes of fixed storage each in a 225mm package, and the RSD's (Removable Small Drive) providing 64 Mbytes of storage each on a removable cartridge just 225mm in diameter.

Back-up for the fixed disc systems is provided for by the inclusion of a tape streamer device capable of backing up 45 Mbytes of data on a ¼" cartridge tape in 18 minutes.

Conventional ½" magnetic tape is provided by an intelligent interface driving a dual density low-cost magnetic tape unit which will take any reel size from 600 to 3600 feet.

Terminals are interfaced to the S Series by terminal multiplexor interface cards which each support 8 terminal ports at a programmable line speed up to 19,200 baud. The board contains its own 16 bit micro-processor and 64 Kbytes of RAM memory for data buffering and program code. On-board diagnostics are provided in 16 Kbytes of EPROM.

Parallel printers (line printers) may be interfaced using the parallel interface card which supports two high speed DMA (Direct Memory Access) printer ports. In addition this card also contains expansion interrupt controllers and a Time Of Year clock which is backed up by a Nickel-Cadmium battery on the card such that the date and time is not lost during power-down.

Communications between S Series machines is handled by the Communications Adapter. This card contains its own Intel 8088 micro-processor and 128 Kbytes of RAM, 16 Kbytes of EPROM for on-board diagnostics, and supports two syschronous serial lines using RS232 or RS422 standards at speeds of up to 9600 baud (RS232) or 880 Kbaud (RS422). Protocol handling is performed by the on-board micro-processor using programs resident in the RAM memory. The RAM is loaded by the host CPU such that protocols may be dynamically changed. A variant of this board is under development which will provide a local area network interface (Ethernet), and also terminal cluster controller functions to both local and wide area networks.

The S Series is therefore more than just another minicomputer. It has a distributed architecture which may utilise anything from one to eight 16 bit micro-processors in providing end-user service to multiple users.

A measure of the relative performance of the S Series against various other small computers in a similar marketplace may be seen by the following table of benchmark results from tests using BASIC.

Basic Benchmark	S500 Floppy disc	S500 Hard disc	PDP 11/23	PDP 11/34	ICL DRS20 Model 50	ACT Sirius
Integer Assignment	2.1	1.9	2.4	2.1	16.4	14
Unsatisfied condition	3.8	2.7	4.5	4.2	25.9	24
Array filling	50.2	50.2	0.41	0.37	3.2	2.4
File writes	41.4	21.3	39.7	39.6	87.6	128.4
File reads	40.3	28.3	39.4	39	18.1	56.4
File open & close	117.0	178.7	52m9s	51m39s	12m18s	502.7

Cabinetry

THERE are many goals which need to be borne in mind during the design of cabinetry for computer systems. The S Series of computers currently comprises three basic models, the S300, S500 and S2000 which are designed for different markets. The first, the S300, is a desk top machine for use in any environment. The second, the S500, is a small minicomputer which would normally be used in an office environment, either as a floor standing unit or on a desk top. The S2000 is a medium scale minicomputer normally housed in a computer room environment, but quite capable, in terms of noise and environment, of being used as a standard office environment. The S Series was therefore designed in cabinetry which suited these diverse needs.

The goals behind the designs included:-

- Physical size comensurate with target environment.
- Ease of transportation.
- Ease of access for maintenance, particularly for larger models.
- Aesthetically pleasing, yet functional.
- Maximum ease of manufacture at minimum cost comensurate with volumes.
- Human engineering factors.

To take these points one at a time, let us first examine the aspects of physical size. At the bottom end of the range the machine is designed to fit on a standard desk without excessive obtrusiveness. Even the S300 is, however, a multi-user machine, the standard model being equipped with five serial ports for terminals and/or printers. The emphasis is therefore on a self contained box for CPU and disc peripherals (floppy or Winchester), with the terminal connections mounted on the rear panel. Terminals are connected by standard RS232C links and may therefore be remote from the CPU box. The S500 has a similar objective, but it is required to house much larger disc drives, and to be expandable. Every S500 therefore contains a 12 slot backplane into which may be plugged the various hardware expansion options which are available. The S2000 is designed for larger storage and terminal capacity, and is housed in a floor standing cabinet which has completely removable outer skins to enable access to the frame and electronics from all sides.

Each of the packages in the smaller systems is easily carried by one person, and the larger systems all have an internal steel frame to support the structure, thereby avoiding stress on the moulded cabinetry.

Access to the cabinetry, for maintenance or upgrade, is particularly important for ease of servicing. The S2000 has moulded skins which fit around a steel frame and which may be completely removed during maintenance.

The looks of modern office equipment are largely a matter for personal taste, but the S Series has been designed in consultation with industrial designers to fit into either office or computer room environment with equal aplomb. The detail of the design, such as the corner radii, chamfered switch surrounds and ventilation slot placing have been carried through the range of CPU's to include the terminals and printers used with the S Series products. The colour scheme has been chosen to be restful on the eye, and is matched by the selection of the key-cap colours and engravings to provide a single standard keyboard which may be used for data processing and word processing functions.

The selection of the appropriate manufacturing process is not just a function of cost but also of choosing a material to achieve the desired effect. The S Series products are manufactured from a combination of steel framework with expanded polyurethane foam moulded skins. This process, which is carried out completely in-house, allows the manufacture of products very cost effectively in quantities up to around 10,000 per annum, providing most of the advantages of injection moulding without the extremely high cost of moulds.

Finally, and perhaps most importantly, are the human factors. The user's interface to a computer system is currently via the VDU screen. Systime manufacture the standard visual display unit with a large (15") anti-glare screen in three colours, black, bronze or green. The VDU cabinet follows the same design detail as the other cabinets, has a removable keyboard with a comprehensive set of function keys, and incorporates many screen features which are callable by the user programs such as large characters, flashing, underscored, half-Intensity characters, split screen scrolling and many more. In addition our latest Syscope 10 VDU, which has full colour, Viewdata support, and pixel orientated colour graphics, can be interfaced to the S Series.

S Series Software

THE operation of any computer system is only as good as the software which it runs, and the environment in which application software runs is only as good as the system software, in particular the operating system, of the computer. At the bottom end of the S Series range, standard operating systems, such as CP/M, MP/M and MS-DOS, provide a suitable and adequate environment for the user to create and run his programs. For this reason the S Series machines all run these standard operating systems, and the Series 300 in particular is designed to use these systems.

However, as the capability of the machine increases, so do the demands of the user for more sophisticated features in the operating software. For this reason Systime has designed and developed a completely new operating system, MPS, for use with Series 500 and Series 2000 computers (and also with the more powerful Series 4000 currently under development in Systime's Research and Development facility in Leeds).

MPS is a multi-user, multi-tasking real time operating system, capable of supporting many users simultaneously in a time-sharing environment. It is driven by a user-friendly command language which closely follows the English language in the manner in which commands are structured. A full range of commands are implemented which enable the user to create, edit, compile and run application software written in a variety of languages as well as perform many utility functions such as status monitoring, file transfer, file backup, print spooling, terminal characteristic maintenance and many more. Every command and utility program is provided with extensive HELP facilities to obviate the need for reference to instruction manuals when operating the system. The user is able to add his own commands to an MPS system by way of a sophisticated, parameter-driven command stream processor which enables complex sequences of commands to be simplified, in some cases, such that they may be invoked by a single keystroke.

Application software for MPS may be written in a number of languages. BASIC-500 is a fully compiled implementation of BASIC incorporating features which make it extremely compatible with BASIC PLUS (which operates under the RSTS/E operating system of the Digital Equipment Corporation PDP-11). This has enabled Systime to convert most of its application software to run on the S Series machine with the minimum of effort, and to reap the performance benefits of fully compiled code. In addition to the BASIC PLUS features, BASIC-500 allows the use of resident shared libraries of commonly used functions, a fully implemented CALL facility, and all programs automatically produce shared code such that multiple users of the same program share a single copy of the program in memory.

FORTRAN, Pascal and PLM/86 are all supported using Systime's implementation of the Universal Development Interface (UDI). This enables modules written in any of these languages to be mixed in order to create the final program. S Series FORTRAN 77 is to the 1977 ANSI standard and produces fully compiled code which makes full use of the features of the floating point processor present in every MPS-based system.

MPS also supports programs written in COBOL. The S Series COBOL implementation is Micro-Focus Level II COBOL which is certified to the 1974 ANSI standard to Intermediate-High level. This implementation includes Fileshare, enabling indexed files to be shared among multiple users, and allows any software written for any machine supporting Level II COBOL to be run on the S Series.

Using MPS as the operating software, the multi-processor architecture of the S Series machines is exploited to the maximum benefit of the user by off-loading functions into the on-board micro-processors present in each intelligent interface. Nowhere is this more true than in the area of communications where all protocol handling functions are performed by the on-board 16-bit micro-processor which is provided with 128K bytes of memory for protocol handling tasks and buffering. The communications adaptor is backed up by software functions enabling inter-processor communications and file transfer using a variety of protocols including HDLC and CO3 (for ICL mainframe connection). Work is well advanced which will allow the connection of S Series machines to X25 packet switched networks and to Ethernet Local Area Networks.

The features embodied within MPS, together with 100% compatibility between members of the S Series machines, represents a significant benefit to the user as his investment in application software is protected while bringing feature-rich software, normally found on expensive machines, to low-cost computers.

*Multibus is an Intel trademark

Systime computers will help sports planning

A NEW computerized management information system for sports facilities in Scotland, the first of its kind in Britain, will be launched in April. The experiment, which will cost £75,000 to set up and three years to introduce and develop fully, is expected to encourage efficient and cost-effective management of sports facilities. This is particularly important for sports centres and swimming pools, which have high capital and revenue costs.

The Scottish Sports Council became aware for the need for such an information system after a study made of sports centres and pools in Scotland six years ago. The findings were published in 1980 and have been widely used as a management tool and as a basis for future planning of sports facilities.

Yet the lengthy method of analysis used for the study meant the information took a long time to be made available. With the new computerized system, developed in conjuction with Systime, detailed information of the use of the facilities will be available immediately. This will allow immediate changes to be made in programming, pricing and other variables to see how these affect activities and the use of facilities.

The experiment, which is being funded under the Scottish Sports Council's scheme of experimental and prototype projects, is being undertaken with four local authorities. The four pilot centres invited to take part are The Royal Commonwealth Pool in Edinburgh, Bellahouston Sports Centre in Glasgow, Grangemouth Sports Centre and Lochside Leisure Centre in Forfar.

Ken Hutchinson, the Council's chief executive said in Edinburgh "With about £90m being spent each year on sports facilities in Scotland it is essential that the most efficient and cost-effective use of both existing and future centres is made.

"The up-to-date information this system will provide will be of great value to the managers of facilities and will also help the Council to keep up the standard of its advisory and planning roles."

SOFTWARE PRODUCTS FOR 'WHITE COLLAR' MARKETS

SYSTIME'S policy is to continue to expand its growing portfolio of applications packages tailored to the the specific requirements of professional practices and other businesses. Marketing Support Manager, Francis Sanz, here describes recent developments

Systime offers a comprehensive range of commercial systems packages to the 'white collar' market which we have subdivided into three market sectors; Professional Services, Automated Office and General Accounting.

PROFESSIONAL SERVICES

THIS sector is involved with the design and implementation of software products aimed at the professional and allied business. We entered this sector two years ago with the launch of the insurance brokers system which covers the areas of policy, client, and insurance company records maintenance. This has its own letter writer module and it can be linked to the standard nominal ledger system. Currently the insurance brokers system is installed in over 50 sites dealing with all types of insurance business. An additional module to be launched shortly is a claims administration system and under review is the development of modules for Life and Pensions and Unit Trust Administration.

Soon after launching the insurance brokers system we released a solicitors accounting package designed to deal with all aspects of solicitors accounts and bank reconciliation. This system can also be linked to the standard nominal ledger, and the modules dealing with time costing and progress monitoring are in the advance stage of development. Systime's solicitors package is already installed in over 20 practices.

In 1982 the travel agents accounting package, STAMP, was released. It caters for all aspects of day book entries, airline ticket sales and incorporates its own Sales Ledger.

Products ready to be launched in this sector in the early part of 1983 are an Accountants Package consisting of the standard ledgers, general time recording and incomplete records, the latter module already being used in several offices of a large partnership of accountants. A dentists package and a 'back office' hotel system are other software products to be introduced. All these packages have been designed in conjunction with members of the respective professions and as such will maintain the high standard of relevance which Systime always offers in its applications software.

Systime's latest addition to the products structured for the professional sector is the ESTATE AGENCY PACKAGE which has been designed to aid the busy Estate Agent Practice.

The main features or options of the system are:

- Up to 5000 prospective buyers.
- Up to 32000 properties.
- Matching up to 6 property characteristics.
- Instant details of buyers and vendors.
- Vendors valuation log.
- Sign management system.
- Sales Progression and Advice Notes.
- Cash Flow Analysis.
- A powerful letter processor.

Benefits to be accrued from such a system are:-

Improved client service, improved financial management, increased productivity, better overall control of your business and potential for growth in the future.

AUTOMATED OFFICE

THE company is involved in the marketing and support of office automation software, one of the fastest growing areas of the computer industry. Included in this market sector are two major interactive word processing packages, WORD-II and LEX-II, which already have in excess of 100 users in the UK alone. The popularity of these products is to a large extent due to the fact that they operate alongside other standard Systime products under the RSTS/E, RSX-11 and VMS operating systems. This sophistication, combined with their operational simplicity, promises an equally successful future for these two products.

In 1982 we introduced a third word processing system to the Systime product range. This is WORD-500 designed and developed to operate on the powerful S-Series range of Systime computers. WORD-500 runs under the Systime developed operating system MPS and brought to the UK market a powerful British designed and manufactured word processing system. Like its "big brothers" WORD-500 offers all of the advantages of a sophisticated word processing system combined with a simplicity which makes it easy for a novice to use.

Last year also saw the Computex private viewdata system brought into the product range. Computex is a highly extendable range of software tools allowing the user to create an in house viewdata system, to meet his own requirements in line with Systime philosophy. The package will operate on all of the company's current product range and is upgradeable from one range to another.

The unveiling of the Systime Office Automation system will be a major event for us in 1983. It will offer a practical and workable solution to the recognisible problems within the office environment. The total office automation system includes: electronic mail, diary retrieval, diary systems and telex interface. It is designed in modular fashion allowing for phased implementation of features as and when required by the user. The system will be available for the total range of Systime equipment. Alongside the software packages a number of new hardward products will be introduced for office automation including the SYSCOPE 10 plus colour multi-purpose visual display unit.

Systime's new office and factory complex, arguably the most technologically advanced in Europe, will have the automated office system at its hub.

GENERAL ACCOUNTING

THIS sector is in the horizontal market of general business systems and products are complementary to the other sectors. The main products are Payroll, Sales, Purchase, and Nominal Ledgers, two of them winners of the 'One Million Dollars' sales award. Their performance and reliability is evident by the fact that each of these products have between 300 to 450 users in the UK.

Other products available in this sector are Order Processing, Fixed Assets, incorporating the regulations of SSAP 16, and two financial modelling packages: Finesse, an instruction driven sophisticated financial modelling product, and Syscalc, a screen based worksheet business modeller.

Visitors to the Which Computer show will have an opportunity to see the new generation of Systime's general ledger integrated package designed to provide a set of general business modules which can be easily tailored to meet the specific requirements of individual users without the need to make program amming changes. Another product launch is that of Multiform, a general report generator which will enable the user to define their standard ad hoc reports from the files of any other Systime software product.

Continuing our policy of development and enhancement of our product range a new Sales Order Processing system is to be launched early this year.

Two major applications software products for the 8000 range are also undergoing development. One is designed to handle financial procedures and the other for manufacturing. Both of these will be able to exploit the advantages of Systel, our telepro cessing monitor, which we have continued to develop and market successfully, especially in the USA.

UTOPIA

IN ORDER to provide software which can accurately reflect your particular business needs without 'breaking the bank' Systime have developed UTOPIA – a set of financial and order processing modules which can be easily structured (without re-programming) to produce a system which contains the facilities you require. The flexibility of the system arises from the high standard of functionality which has been incorporated into the software but can be implemented as and when required. This covers areas such as: accounts code structures; transaction types and processing rules; discount terms; analysis breakdown and report definitions.

In isolation the modules can solve particular problems but the main benefits arise when they are implemented as a totally integrated business system ensuring the maximum time saving and mini-

SYSCALC

THE ability to obtain accurate and up to date information and make informed decisions/forecasts based on this information is fundamental to every management function. As well as achieving this Systime have launched a new business modelling package, SYSCALC. This is an advanced screen-based 'worksheet' system containing an extensive set of standard functions/expressions which can be enhanced by defining your own specific functions. The screen acts as a window to the worksheet allowing you to view an area 16 rows deep and up to 22 columns wide; out of a maximum 255 rows and 63 columns. The window is used to enter all data, instructions and the results are displayed, if necessary following immediate recalculation of the entire worksheet.

The use of SYSCALC is greatly simplified by the inclusion of a 'help' facility which can direct you

OPPORTUNITIES

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Are you going in our direction?

If you're already successful in the computer sales business, yet abitious and talented enough to be looking for even more success, then you could well be heading in our direction.

As Britain's largest manufacturer of interactive business computers, Systime's continuing dramatic growth – over the last two years, we've almost doubled our turnover – means that we're still looking for first class talent for our sales operation so we can continue to satisfy a continuing market demand.

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Carrying the flag for Britain's Computer Industry

SYSTIME'S ENTRY INTO INDUSTRIAL ENGINEERING

TAKING Britain decisively into robotics SCAMP (Six Hundred Group Computer Aided Manufacturing Project) has been designed and engineered by The 600 Group incorporating a Systime computer system. The SCAMP project is conceptionally unique and is one of the first major flexible manufacturing systems (FMS) to operate in the UK. Dr Adrian Wilkins, Systime's project manager on the SCAMP project, explains the functions of the control system and reviews the design principles on which its concept is based.

ONE OF THE inherent problems with FMS is that it will take a minimum of two years to design and set up, and probably three before it goes into full production. With such a prolonged lead-time there is always a risk that the system will be out of date before it is commissioned, or at least partly overtaken by developments in the interim. The most crucial philosophy, therefore, is to partition the system, both hardware and software, into modular functional units. This way, not only can development of the various modules proceed in parallel, but also localised changes or upgrades are possible without the need to go right back to the drawing board on project completion.

This partitioning concept is also fundamental to resilience against failure. As the complexity of the system grows, so too does the risk of faults developing. One could expect a point to be reached (perhaps where there are upwards of a dozen machine tools) where there was always at least one piece of equipment out of commission. It is essential, therefore, that the whole system does not grind to a halt under such circumstances, and modularity is the key in this respect.

On the SCAMP system the various machine tools are arranged in eight machining bays. Each of the two lathes, two turning centres, the cylindrical grinder, hob and broach share a single bay with a robot. (In the gear cutting bay one robot services two machine tools, but this is because the two processes are intimately linked). Thus, say a robot failure will only put one machine out of action; the remainder continue functioning normally. All the machine tools except two have an integral CNC controller, and all the robots have a front-end microprocessor.

The parts transfer system of SCAMP is similarly modular. Even though it is one physical unit, the circulating pallet conveyor is split into 14 logical sections, each under the independent control of a microprocessor. Each section comprises a length of the recirculating conveyor with an identification station where unique tags on each pallet are read by a bank of proximity sensors. A pallet collect gate at each section transfers a pallet from the recirculating conveyor into a contra-flow siding, control mechanisms index pallets in the siding past the robot, and a despatch gate ejects a pallet back out of the siding onto the main conveyor once more. The siding has capacity for twelve to eighteen pallets, giving a buffer of work of several hours at each bay. There are eight of these sections devoted to the machining bays, and a further six to the loading bays where raw material is loaded onto pallets, or finished products are removed. This modularity not only allows all the bays to function asynchronously, but also achieves the maximum degree of resilience, in that possible faults are localised to one bay only.

Having ostensibly designed the FMS as independently functioning building blocks, the next task for the designer is to link it all up into a single coherent system. There are two significant points to note: firstly the individual machines (tools, robots, conveyor controllers) are all hung together at a single node – the computer system – and because the design does not permit any single-point failure from preventing the remainder functioning, the computer must be duplicated. This will be discussed later.

The second point is that the links between the computer and the various machine tools, robots, etc., are physically long distance – over a hundred metres on SCAMP (and this must be regarded only as an average-sized FMS). Cost constraints would not allow the cabling of multi-way data cables over such distances, and environmental effects (such as non-unity power-factor electrical loads causing earth voltage potentials) further preclude data signals traversing the length of the shop floor. Therefore every module is equipped with local 'intelligence' (microprocessors) and the machine-computer links become data communications lines. These are inexpensive twisted-pair circuits opto-isolated for common-mode noise rejection. The multiway cables are now confined to short micro-processor-to-machine links, and the microprocessor itself takes a significant processing load off the main system computers.

The communications aspect of SCAMP was one of the first to be tackled. After assessing all the available communications 'protocols' currently in use for computer-to-computer links, none was found that did not exhibit serious deficiencies for an FMS environment; therefore a new protocol was exclusively designed for the purpose. The control or status data passed between the computers and the machines is sent serially as 'packets' under program control. Framing sequences are added round each packet, and a checksum is appended. Any errors on transmission are detected by the communications handler, and the packet is retransmitted. This gives a high standard of confidence in the data received, and furthermore provides a useful monitor of each of the communications links to the system. The protocol was implemented on the computers, on the robot controllers and conveyor controllers that Systime designed for the SCAMP project, and on most of the machine tools by arrangement with the CNC suppliers to the project. A high degree of commonality was thus achieved, with the consequent simplification and ease of debugging.

The prime tasks for the computer on an FMS system are as follows:

- to enable the manager to enter orders at a terminal, and to schedule the foreward work-load in such a fashion that the most efficient utilisation of the machine tools is gained concomitant with all the due dates being met. On SCAMP the scheduling is performed with the aid of a colour graphics VDU which presents the loading for each machine bay as a series of different colour bars of length in proportion to the predicted machining time. The manager can pan through the foreward schedule and manipulate the batches using a joystick to rearrange them at will, although the system performs an integrity check to ensure that an initial operation is scheduled before a subsequent one.
- to prompt the operators to load up new batches of raw material as previous batches are completed, and to off-load finished work
- to direct the palletised batches to the appropriate machine tool bays in the correct sequence. On SCAMP the conveyor system is the pallet transfer mechanism, but it could equally be a robot-tug type of device.
- to store part program centrally, and distribute them to the machine tools (and robot programs to the robots) as and when the batches arrive at the appropriate machining bays. In this respect the computer is acting as a DNC (distributed numerical control) supervisor.
- to monitor the status of the plant so that any faults may be speedily identified and rectified. When not in use for batch scheduling, the colour VDU terminals on the SCAMP system are used to display a mimic of the entire cell, with green denoting satisfactorily operating machines, yellow showing parts of the system that may require operator attention shortly and red indicating severe faults or batches held up because of delayed operator action.

Just as with the architecture of the hardware, the software is modular also. The basic functional program modules for the 'front-ends', the central pallet supervisor, the terminal data-entry module, the interprocessor link handler, the program which handles all data-base modifications, the mimic display and the scheduler all interact through well defined interfaces at the system level. Again this has allowed independent development and during the course of the project minor changes in specification have been made possible through this approach.

The SCAMP system computers are the medium-range Systime 5000-E processors. They run under a real-time operating system, and the Fortran has been used throughout for the applications programming. All functions requiring input from personnel are menu-driven – the operator selects the appropriate function from a displayed list of options – and a simple question and answer process follows. This 'turn-key' approach ensures easy use by relatively untrained staff, an important consideration for industrial users. SCAMP is designed to run with only a small fraction of the labour force that would normally be associated with such a plant, but two to four operators are still required for at least one shift a day.

The computers act in hot-stand-by to each other, usually both will be running, but only one will have live control of the FMS cell. The other will be acting as a standby should the first develop a fault. In order that the back-up processor can take over in this event, all appropriate status changes and actions by the live computer have to be replicated in the back-up machine. To do this the computers are connected back-to-back by an inter-processor link, across which all the necessary data is transmitted. Unfortunately this substantially increases the complexity of the software, by as much as a factor of ten in some circumstances, but this is a necessary price to pay for a guaranteed continuous operation. For data security, the interprocessor link also uses the SCAMP communications protocol.

The interprocessor link serves another function in addition: that of detecting if one of the processors should fail. A simple watchdog circuit monitors the transmissions from both computers, and switches over the communications lines to the backup machine should the live processor stop transmitting for any reason. Switch-over from one computer to the other is accomplished in only a few seconds.

In addition to the essential software functions listed above, other programs have also been implemented on SCAMP. These include operator instructions for setting up machine tools when a batch is changed over, automatically generating inspection requests to the robot at a predetermined frequency, and calculated tool-life so that the tools may be changed before they wear out. Facilities also exist for the inclusion of a CAD package to assist the generation of part programs; this has not been implemented on SCAMP because the system will normally only be used for production of standard 600-Group components. But for an FMS in a 'jobbing-shop' environment this would be an essential aid to fast turn-around.

Systime's involvement with SCAMP, as the contractor for the computers and control system, has been a significant entry into the industrial engineering scene. The successful conclusion of the project places Systime in a commanding position to tackle further ventures of this type.

One such venture could be the equipping of Systime's new £20 million factory in Leeds with a flexible system capable of manufacturing virtually any electronics product which might foreseeably hit the market over the next ten years.

The sucess story of Systime is one of the brighter spots among today's industrial gloom and recession. The company which is entirely British-owned, has continued to expand at a substantial rate. This success is due to several factors: firstly the company's commitment to staying abreast of the technological advances in microelectronics, reflected in their continually changing product range. Secondly, the recognition that most customers entering the computer market require a total solution, from pre-sales consultancy through computer installation and software to post-implementation support. As a result over 80% of systime's business is for 'turn-key' systems, and although the greater proportion of these are for commercial data processing functions, the Special Systems activities of the company have accounted for some major industrial developments, and have been largely responsible for the diversification of Systime's enterprise – an unusual feature for a computer manufacturer.

This article has previously appeared in The FMS Magazine.

Computer maintenance – a dynamic growth sector

by Barry Roberts,
Systime's Director of Field Engineering

ANYONE with experience of the astonishing pace of developments in the computer industry over even the last three or four years might be forgiven for assuming that the industry's capacity for technological innovation is virtually unlimited. While there is no need to object to that assumption it seems reasonable to suppose that we are still a long way from devising anything approaching a perpetual motion computer and until that happens every computer user will need to rely on such maintenance services as are available.

It is hardly surprising, in the circumstances, that the demand for computer servicing and maintenance has been accompanied by the growth of specialist firms as well as the development of extensive field engineering divisions by the major manufacturers. Although the standard user contract provides for a maintenance service there is now a growing tendency for suppliers to compete for third party maintenance contracts. Not only are these seen as a valuable source of long-term revenue – a seven-year maintenance contract can be worth as much as the original hardware – but our experience shows that such third-party contracts can lead to incremental orders for hardware.

There can be no doubt that the factor which dominates the mini-computer maintenance market is the proliferation of computers bearing, wholly or in some part, the Digital Equipment Corporation (DEC) label. The major extensions to the DEC range in the last two or three years have made it increasingly difficult for the small suppliers and the independent maintenance companies to keep up with the ever-increasing problems and costs associated with supporting a customer base with a diverse range of CPUs, peripherals and terminals.

With announcements of DEC's new range of disc and tape drives and the probable announcement of new CPUs in the VAX* range of computers in the next year or so I consider it is unlikely that many of the sixty or so independent maintenance companies now operating will be able, for much longer, to offer the kind of servicing required by commercial users of mixed DEC systems.

Like other manufacturers DEC have always maintained their own "pure" equipment but the company's policy recently has been to enter the market for servicing mixed DEC systems which may have been marketed by an OEM. It is going to be interesting, to say the least, to see how far DEC intends to develop its exploration of the third party maintenance market. Conceivably that part of the company's strategy could be aimed primarily at acquiring such hardware spin-offs as might accrue to it over a limited period as well as reducing the possible revenue of the smaller engineering organisations.

As long as DEC pursues its policy of acquiring third party maintenance contracts the smaller independent servicing companies will inevitably feel the pressure. Quite apart from the likely loss of such contracts by these companies, however, the fact is that only DEC itself and Systime are now able to cover the entire DEC range of hardware. Our own systems are based on DEC's PDP-11* and VAX range of equipment so we are well placed to offer our maintenance services to DEC users in the UK.

Users who are serviced by Systime and who wish to upgrade or enhance their system will always have the advantage of a wider choice with Systime. We are able to supply either DEC equipment or the comprehensive range of compatible hardware, both of which would be competitively priced compared with DEC supplying the equipment. The user has the benefit of a better hardware progression path and also the knowledge that they will not have to arrangements to achieve it.

In addition the user will be buying the hardware from the UK's largest supplier of mini-computer turnkey systems who will not only undertake to provide the equipment but will also provide all the appropriate operating and application software.

Over the last ten years, while building up our own customer base of over 1500 installations, we at Systime have been developing the Field Engineering division which now employs over 200 computer engineers in the UK. This division with a workforce of over 350, is now the biggest in the company and in addition to the engineers employed in the UK we now have approximately 60 engineers and engineering managers working abroad in Europe, Africa and the Middle East.

Speed of response and availability of spares, are, of course, fundamental to the success of any computer maintenance service and Systime's spread of strategically sited locations throughout the UK provides us with an obvious advantage. A recent survey showed that the industry's average response time in the UK under computer maintenance contracts is four hours. At Systime we are achieving an average time of only two hours for our engineers to reach the user and then an average fix time also of two hours.

Our stocks of spares held at these strategic locations in the UK and at our establishments abroad are valued at over £5 million and are represented by 9000 line items and a total of over 300,000 separate parts.

module repair centres, one in the City of London and the other at our Leeds headquarters, which together have over £2 million deployed in test systems and automatic test equipment.

These resources have obviously been a major factor contributing to the impressive expansion of Systime's third party maintenance business both in the UK and abroad over the last two years. Our experience shows, however, that foreign computer users seem much readier than those in the UK to offer incremental hardware orders on the basis of a maintenance contract. This has been particularly noticeable in Holland, our biggest overseas market for third party maintenance where we have recently gained several major incremental hardware orders. In the Gulf region and the Far East, too, where the local availability of our engineering teams provides us with a major advantage, we find that hardware orders tend to follow servicing and maintenance contracts.

In addition to third party business one of the most exciting new opportunities in computer maintenance seems likely to be the development of remote diagnostic capabilities (RDC) which will enable us to monitor the performance and locate faults in computers linked to our control centre. Systime already offers an RDC service to customers and we are exploring the possibilities of advancing the concept.

* VAX and PDP-11 are registered trademarks of the Digital Equipment Corporation

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- JUNE 7–8–9 Office Automation Show, Barbican Centre, London
- OCTOBER 18–26 (inc) International Business Show, NEC, Birmingham
- NOVEMBER 15–16–17–18 COMPEC 83, Olympia

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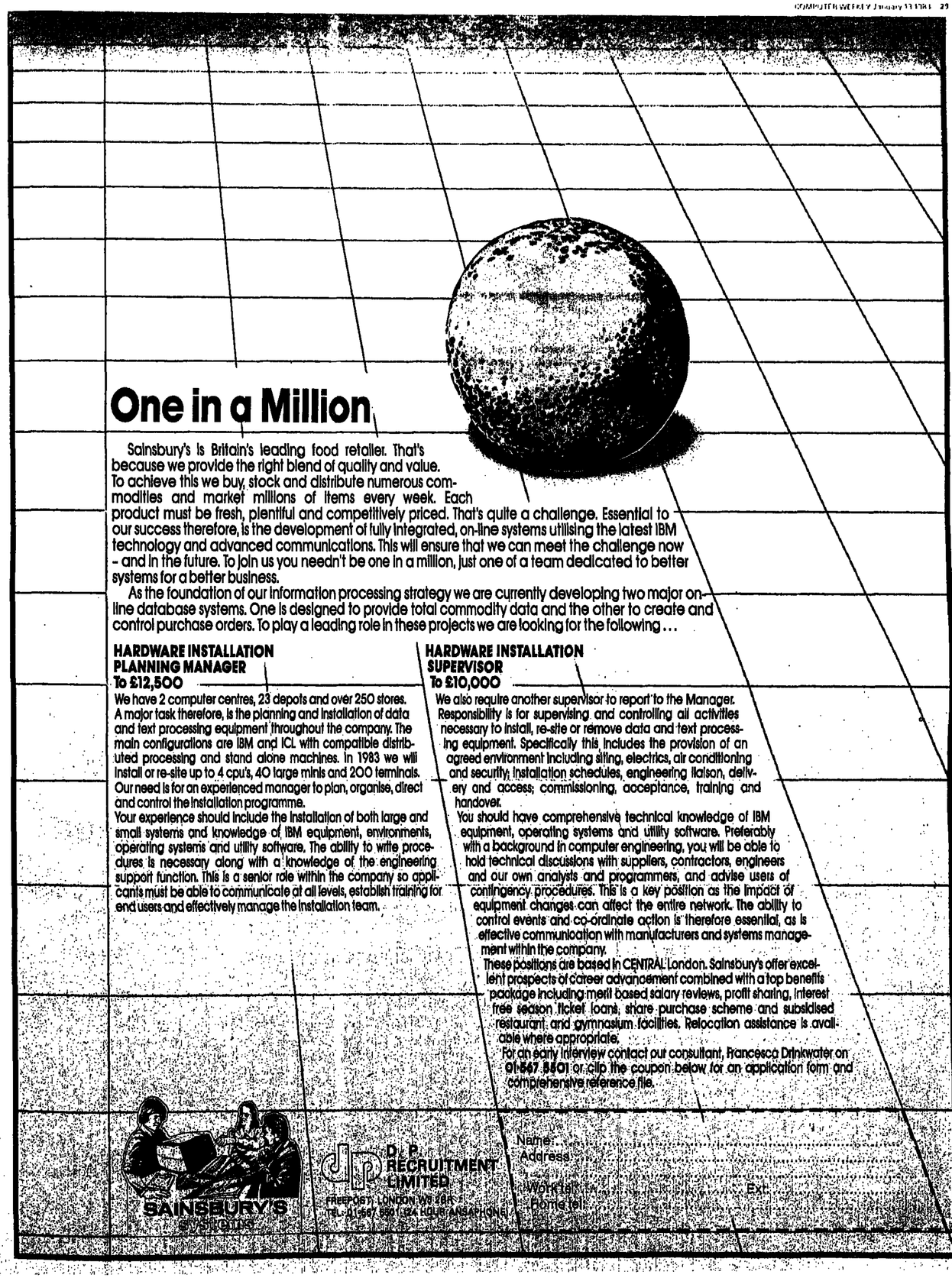

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PL1 ANALYST PROGRAMMERS c £25,000
At least 4 years PL1 experience, preferably using TSO/SPF, IMS DB/DC.

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TECHNICAL SYSTEMS ANALYST £20,000
Minimum of 5 years experience, with 2-3 years at Analyst level. Experience in a Process Engineering environment is preferred, with an indepth knowledge of FORTRAN & JCL. Experience in a Chemical Processing/Oil Industry environment would be an advantage.

COMMERCIAL SYSTEMS ANALYST £18,500
Successful applicant will have at least 3 years programming experience using COBOL or FORTRAN aligned with proven Project Control skills.

COMMERCIAL PROGRAMMERS £16,000
COBOL Programmers with between 2-5 years IBM COBOL experience ideally in a database environment.

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Home in on systems . . .

SOFTWARE & HARDWARE OPPORTUNITIES to £16,000

Our client is a world leader in all aspects of advanced defence technology who, with the award of a major contract to develop a completely new underwater weapons systems, is totally committed to an exciting and dynamic long-term development programme.
The company is now seeking specialists with the expertise and innovative spark to maintain the standard of technical excellence which is necessary in this highly demanding field.
There are many and varied roles to fill and your particular skills and experience may well give you a choice of sound career paths within diverse specialist areas. With this wide range of vacancies we wish to hear from you if you have a degree or equivalent qualification in Science, Engineering or Computing and are currently involved in one of the following:

SYSTEMS ENGINEERING ● REAL TIME SOFTWARE DESIGN
● HARDWARE DESIGN, DEVELOPMENT or ENGINEERING

Specific areas of expertise which would be of particular interest include:

Minicomputer and Microprocessor Systems ● CORAL 66, FORTRAN or Assembler Languages ● Acoustic Power Sources ● Active and Passive Sonar ● Transducer Design ● Calibration and Test ● Signal Processing ● Analogue and Digital Systems ● Guidance Systems ● Trials Planning, Analysis and Definition ● Performance Evaluation.

Based in the Home Counties the company offers secure employment, exciting prospects and a first-class salary package. Why not rise to the challenge to go deeper into systems and contact us NOW for more information and an application form.

Telephone KEN TATE or JOHN GRAFHAM on 0494-30517 or write to the address below.

daton Recruitment

Daton Recruitment Limited, 29 Easton Street, High Wycombe, Buckinghamshire HP11 1NY

[2123]

Senior Career Appointments

North Home Counties Location

Our client has for many years been a major supplier of complex computer and communications systems. They have several development groups who are responsible for the design and implementation of standard products. Also, as you would expect in a large organisation, they have many specialist technical staff who are committed to on-going projects. The company's success and continued expansion has created the need for a new internal group which will be responsible for significant communications projects. These projects are national and international in scope involving government bodies, P.T.T.s around the world and many external contractors. A manager has been appointed to build and run this new group. He now needs to recruit his key Project Leaders.

Senior Project Leader
Communications Networks
£13K-£15K

Senior Project Leader
International Videotext
£13K-£15K

Senior Project Leader
Special Projects
£13K-£15K

Senior Project Leaders will be senior software experts who can lead projects. They will be joining a new department and will, therefore, be creative self starters capable of detailed technical work. Projects will be in the areas of data communications, networking and videotext. Emphasis will be placed on the design, the implementation and the testing of customer orientated application software.
Applicants will be capable of analysing a customer's requirements, negotiating with the customer at a technical level and agreeing a design specification. Ideally they should have several years software project leadership experience gained with a computer manufacturer, or a large systems house. A sound knowledge of design techniques, operating systems and languages is desirable.

In other departments within our client's organisation there are opportunities for:

Project Leader
Operating Systems
to £14,000

Candidates should have expertise either in the development of a manufacturer's operating system or its equivalent in content. Previous 'blank-sheet' design experience is preferred but it is essential that applicants have at least 8 years post-degree experience in a relevant software development environment. This must also include a significant supervisory and project management content as the position involves responsibility for up to 15 programmers, together with the ability to plan and estimate work-loads efficiently.

User Support Manager
to £16,000

The successful applicant will be responsible for approximately twenty staff organised into 3 teams – Software Support, Software Installation and Hardware Support, whose task it is to ensure that customers obtain the optimum utilization of the company's products. He or she will be required to liaise with customers at all levels and evaluate the extent or priority of their problems and also act as a source of customer opinion to the rest of the company.

Senior Team Leader – Unix
to £13,000

The successful candidate will be responsible for software development relating to the provision of UNIX related environments on its range of computer systems. Applicants should ideally have already managed a small team of programmers, have had several years of operating system developments (preferably including technical knowledge of UNIX) and some experience of supervising external projects. This is an attractive opportunity to build management experience in a technically stimulating area.

In addition to the above specified senior positions our client has vacancies for a number of software specialists in various development and support teams. If you have two or more years programming experience preferably gained with a computer manufacturer or systems house using an assembler and/or a block structured language, we would be pleased to discuss prospects with you.
All positions offer a superb opportunity to share in the good fortune of a highly successful and profitable company. The company is large enough to offer most people a permanent career move and diverse enough to provide choice and long term security.
A positive attitude to future career development will ensure further opportunities are provided for people with the will to succeed. Assistance with relocation is provided where appropriate.

Write or telephone (02403) 28383 during office hours –
we are always ready to discuss these and many other interesting positions.

Evenings and weekends only: Terry Harvey – Great Missenden (02406) 4705

[2136]

HR **H. R. Associates Limited** HR

Executive Appointment Technical Personnel Consultants
57a Hill Avenue, Amersham, Bucks. HP6 5BX Tel: 02403 28383
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SALES EXECUTIVES

NATIONWIDE

circa £20,000

There can be little doubt as to the advantages of working with a market leader. Our Client is just that.

The outstanding success of the UK operation is a direct result of substantial investments in the development and enhancements of the product range, together with the high calibre personnel. There is an absolute commitment to the direct customer support of all present and future products. It is considered that their achievements have established a pattern of product and service excellence unequalled in the industry.

As a result of our Client's professional marketing stance and continued expansion, we have been retained to recruit dedicated Sales Executives for positions throughout the UK.

You will currently be a successful computer sales professional, operating in a commercial environment, combining a high level of business practice with the personal credibility and commitment that is necessary for these demanding, but rewarding positions.

Remuneration is by way of a high base salary, negotiable guarantee and commission structure designed to give an outstanding first year earnings package of c.£20,000. A Company Car and all large Company benefits will apply and full expenses will be provided.

For an immediate and confidential interview, where you will be supplied with full Company information, contact CATHY TRACEY on 0908 604848
(24 hour answering service).

(2129)

CTA RECRUITMENT CONSULTANTS

Cathy Tracey & Associates Ltd
SILBURY BUSINESS CENTRE, 356 SILBURY BOULEVARD, CENTRAL MILTON KEYNES, MK9 2LR. TELEX: 825264

ENGINEERING/INDUSTRIAL APPLICATIONS

SOFTWARE ENGINEERS **£8-£13,000**

We are seeking over 30 Software Engineers for several clients in London and the Home Counties. Applicants must have a degree or equivalent with at least two years' experience of (one or more of) CORAL 66, FORTRAN, BASIC, PASCAL in defence applications and/or communications systems. Experience of microprocessors would be an added advantage. One position requires INTEL 8086/8088 ASSEMBLER and real-time control in an industrial environment.

ENGINEERING SYSTEMS ANALYST
c £10,500

Two/three years (non-commercial) software development experience in FORTRAN, COBOL or PASCAL. You will be expected to introduce and develop Host/Target software generation techniques in providing software support to the engineering computer facility, recommend cost effective solutions to dynamic computing needs and keep abreast of hardware and software developments.

ENGINEERING PROG/ANALYST + ANALYST
£9-£10,000

Two and five years' experience respectively is required in a real-time environment using CORAL 66/PASCAL and an ASSEMBLER language. Experience of Z80 microprocessors will be useful. Both successful applicants will work on the development and implementation of real-time engineering projects. The Systems Analyst will take a leading role including systems design. A degree/HNC/HND in Computing or Engineering is preferred for the Programmer/Analyst post but may be offset against extensive experience.

SYSTEMS PROGRAMMERS **To £11,000**

One post requires RSX-11M, MACRO II systems programming experience on PDP 11/34 or VAX running under RSX-11M. Operational excellence is desirable. Ideal opportunity to move from RSX-11M to VAX VMS. DEC 4060, DS4600 systems programming is required for the other post. Experience of CORAL is desirable for modifying software for a large military system.

PROGRAMMERS (5) **£7-£10,000**

Two positions require at least one year's programming with some MACRO II experience to join a team developing a real-time system on PDP 11/34 and VAX 11/780 machines. A minimum of one year's programming in CORAL is necessary for the other three posts, a knowledge of GEC 4060 being desirable. The assignment is to develop software in CORAL for a military project.

The above positions are mainly in the Home Counties. For an Application form and particulars about locations, please telephone.

AMES PERSONNEL
8 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE REIGATE (0737) 222 19 or 22210

(2190)

UNIVERSITY OF SOUTHAMPTON
FACULTY OF MEDICINE

Lectureship in Biocomputation

Applications are invited for the post of Lecturer in Biocomputation. Candidates should have a degree in Computation, Mathematics, Electronics or another suitable subject, together with a higher degree or substantial research experience.

The duties will involve teaching medical students the potential and application of computers in medical and biological sciences and while superficial knowledge of these subjects would be an advantage, it is not essential. The Lecturer will be expected to develop research projects both on his own and in collaboration with other members of staff in the hospitals and the University. Salary scale: £8,370-£13,650 per annum.

Further particulars may be obtained from the Staffing Secretary, The University, Highfield, Southampton, SO9 5NH, to whom applications (7 copies from applicants in the United Kingdom and one from overseas) should be sent not later than 28 January, 1983, quoting ref. 82/58/AJB/C.

(2088)

UNIVERSITY COLLEGE LONDON
Department of Physics and Astronomy

IMAGE PROCESSING GROUP

Applications are invited for the post of Research Assistant in this group. The successful candidate will join a team continuing the development and exploitation of the CLIP series of parallel array processors. The work of the group is supported by an SERC Special Research Grant currently extending to 1986. The main responsibility of the Research Assistant will be to integrate the group's computers (PDP 11/10 and 11/34 running UNIX V7) and array processors (CLIP4R and CLIP4S) into a well co-ordinated system. Experience in software and hardware design, particularly of computer interfaces, and/or local area networks, would be a distinct advantage and at least three years' postgraduate experience in a related field is required. Salary in the range £8,370 to £10,635 London Allowance to £9,810 + £1,065 London Allowance. Further details may be obtained from the Senior Personnel Officer (Academic), University College London, Gower Street, London WC1E 6BT.

(2090)

FOR ADVERTISING RATES AND DETAILS PLEASE PHONE 01-661 9071

USA VIA I.A.

As one of America's leading software consultancies, our client is seeking to recruit

Analyst/Programmers and Programmers

to join their project teams working on a variety of financial and industrial applications at locations throughout the USA.

Applicants should have a minimum of 4 years **COBOL** and/or **PL/1** gained in an **IBM environment**, with at least 2 years experience of **IMS** and/or **CICS**. A broad knowledge of **IBM utilities** would be advantageous.

Although initial postings are for a year they may well be extendable. Excellent salaries, including relocation costs, medical and life insurance cover, are on offer. Only those of single status, or married without children, will be considered.

We are interviewing now, so that short-listed candidates can be finally interviewed by our client, here in UK, in January 1983.

For further details please telephone:
Mark Clifford or Noeleen Holt on (0462) 57141 during office hours or (0438) 727652 evenings and weekends.

Alternatively forward your résumé to:

Marketing and Recruitment Division,
Industrial Artists Limited,
21 Bancroft, Hitchin, Hertfordshire SG5 1JP

Reference **MR1094** must be quoted.

(1507)

Sales Manager

(Director Designate)
Microprocessor Products

Package
Circa £25,000 per annum
+ Quality Car

West Midlands

Our Client, part of a profitable public group of Companies, operates at the forefront of modern microprocessor and microelectronic technology. They have invested substantially in the development of a unique product which since its launch has achieved considerable success, and generated significant orders within major accounts in the public and private sectors.

They now seek an experienced Sales Manager to control the Company's sales activities and to supervise distributors and agents. This key appointment within our Client's operations includes responsibility for recruitment, training and motivation of sales staff, and working closely with the Managing Director, developing the promotional and marketing activities of the Company.

You will probably be aged between 28 and 40 and have extensive experience within the computer industry. You will need to have a creative approach to selling and a problem solving mentality, combined with a determination to achieve sales targets. A proven track record as a Sales Manager within the computer industry is essential.

The successful applicant will enjoy a salary of circa £15,000 per annum, plus a 2 litre company car, and other benefits. The bonus scheme in operation should take your earnings to circa £25,000 per annum and an early promotion to the Board is available to the successful Candidate.

For further information please contact **David Wade,** on **021-236 3781** (24 hour answering service) or on 0785 660051 (Evenings and Weekends).

Technical, Sales & Management Appointments

(2125)

Specialist Computer Recruitment Ltd

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021-236 3781

NORTH
International House, 84 Deansgate, Manchester M3 2ER
061-833 0427

BELGIUM
Avenue Louise 327, Boite 4, 1050 Bruxelles
010 322-640 7151/71

HOLLAND
Willemsparkweg 92, 1071 H.M. Amsterdam
010 3120-760947

COMPUTER SPECIALIST

Oman — £15,000 min. tax free

The Sogex Group are currently involved in the maintenance and operational process control of the Gaubrah power and desalination plant in Muscat, Oman. A key function within this contract is the appointment of a computer systems engineer/hardware engineer, who will be totally responsible for the process computer and peripherals, all of which are based on the Kent Automation K.90 system. Work will consist of trouble shooting repairs, general and periodic maintenance. It is essential, therefore, that the person appointed should have had a minimum of 5 years' experience running a K.90 system or similar installation based on a DEC PDP11 computer, and should be qualified to BSc/HNC level in Electronics. We offer an attractive overseas salary with paid home leave, free accommodation, food, and medical aid.

If you are immediately available and can meet our requirements, please write with full career details showing age, qualifications and experience and a daytime telephone number to:
Overseas Employment Co-ordinator, Group Personnel,
Sogex Management International,
15/25 Bld de l'Amiral Bruix,
75116 Paris, France.

SOGEX MANAGEMENT INTERNATIONAL

MILTON KEYNES

ANALYST PROGRAMMER
£8,500-£9,000 pa + benefits

COBOL/UNIVAC 1100

Phone or send C.V. to Keynes Personnel Ltd, 356 Silbury Boulevard, Central Milton Keynes (0908) 6683851

(2186)

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UNIVERSITY OF LONDON

SENIOR ASSISTANT LIBRARIAN-SYSTEMS ANALYST

LIBRARY RESOURCES CO-ORDINATING COMMITTEE

A senior Assistant Librarian – Systems Analyst is required to develop, implement and maintain computerised housekeeping services for the Libraries of the University. Candidates should be experienced in library work or in the field of computing, with an interest in the application of computers to library management.

Salary in Grade 11B range of Senior Library staff, £10,670-£11,595 per annum, plus £1,155 London Allowance.

Further particulars and application form, obtainable from the Personnel Office, University of London, Senate House, Malet Street, London WC1E 7HU (tel. 01-636 8000 ext 3246). Closing date 11 February 1983.

(2180)

CONTRACTS IN AMERICA

We have been retained by a major American Software house to supply many experienced freelance Programmers with details as follows:

IBM COBOL with IMS

General Commercial applications. Start date now until April 1983.

Free accommodation.

Long contracts (ie. 6-12 months initially).

If interested please telephone Steve Whiting on Farnborough 0252-516141 to discuss your suitability for this contract.

TRIDENT COMPUTER SERVICES PLC
Trident House, 38/44 Victoria Road, Farnborough, Hants.
Telephone FARNBOROUGH (0252) 516141

TRIDENT ARE LICENSED BY THE DEPARTMENT OF EMPLOYMENT AS AN EMPLOYMENT AGENCY AND EMPLOYMENT BUSINESS. LICENSE NUMBER: SE(B)1486

Join the most Advanced ME29 Team in Grocery Distribution

Lowfield, one of the leading, and fastest growing, U.K. distribution companies has recently installed 11 ICL ME29s (with communications links to manufacturers, TMETP, IDMS and IPA) to support its Depot operations. Additionally twin DEC PDP11s are used for financial systems. Order and stock systems applications are being implemented, and development work is planned in the fields of warehousing, vehicle scheduling/costing and other information systems.

To sustain our operational and DP leadership in the industry, we need to fill the following new Daventry based posts –

Senior Analyst/ Designer (c.£10,000)

to investigate and specify business system requirements, planning and managing complete projects through to implementation using both in-house and contract programming staff. Business orientated applicants, with a minimum of two years' experience (to include IDMS and TP applications) must be able to demonstrate successful completion, as team leader, of at least one major business system.

Technical Support Programmer (c.£9,000)

to provide technical support to 11 ME29s (including IDMS and TMETP) and 2 PDP11 systems, macro writing, network support, plus programming technical aspects of systems e.g. communications. Minimum 2-3 years' commercial experience required including ICL operating systems (TME in particular), CL macro writing and IDMS. PDP11 experience an advantage, but training available.

Senior Programmer/ Designer (c.£8,500)

to work within a design team to produce program specifications, programs, and undertake some systems programming. At least 2-3 years' COBOL experience required (to include IDMS in a TP environment) with evidence of team leader capability.

Programmer (£6,000 – £8,000)

to produce, from specifications, a wide range of programs and provide on-going support. 6 months – 2 years' commercial COBOL experience necessary including IDMS systems (TP environment).

Good career prospects/benefits package (part of Imperial Group). Relocation assistance available. Interviews outside normal hours possible.

Please write with full details (including present salary) to Personnel Manager, Lowfield Distribution Limited, 4-6 Church Walk, Daventry, Northants NN11 4BL.

Lowfield

(2155)

Slough Corporation

Computer Manager

Circa £12,000

The successful applicant, male or female, will take charge of the Council's ME29/TME environment reporting directly to the Management Services Manager. This vacancy offers an exceptional opportunity to manage and promote an ICL installation with a Borough Council committed to major development.

We have a 3/4 megabyte ME29 Model 37 and have introduced the packages PLANAPS, QPG, QPAC and FILETAB amongst others. Most recently we have purchased ICL's DRS 20s in line with a developing strategy to provide our Departmental User with increased computer facilities.

Can you offer management experience or considerable potential, comprehensive experience of designing, programming and installing of ICL systems equipment; a sound knowledge of Cobol and TP, a committed approach and the personality to promote this installation to encourage users?

We offer a minimum of 26 days' holiday, flexible working hours and assistance with relocation expenses, as part of our comprehensive package.

Further details and application forms are obtainable from The Personnel Section, Town Hall, Bath Road, Slough. Tel. Slough 875071 (direct line).

Previous applicants need not re-apply

Closing date: 27.1.83

(2142)

GP-Elliott Electronic Systems Ltd.

(a member of the Angus Fire Armour Group of Companies)

We have, due to further expansion, a requirement for additional staff to join our Micro Section.

Software Project Support Engineers c.£8,500

To maintain our microprocessor equipment on oil platforms located in the North Sea, the Middle East and the rest of the world, we require a team of suitably qualified Software Engineers. Applicants should ideally be aged 25-40 and prepared to travel for periods ranging from one to six weeks, sometimes at short notice. They would also, when home based, be used "in-house" on software project work. A good basic salary is offered, together with excellent allowances for site work.

They should preferably have some basic knowledge of block structured programming languages, such as PLM and Pascal and Intel 8085/86 hardware.

These positions offer excellent prospects in a rapidly expanding high technology company. Other employment conditions include a 35 hour week, some paid overtime, 4½ weeks holiday, pension scheme.

Please write to: Mrs. Y. Moore, Personnel/Administration Manager, GP-ELLIOTT ELECTRONIC SYSTEMS LTD., Elliott House, 8 Deer Park Road, Merton, London SW19 3UT. Tel: 01-543 1241

(2162)

COMPUTER PLAN

ANALYST/PROGRAMMERS

£16-12K + BONUS SCHEME
DATA GENERAL COMMERCIAL SYSTEMS
HOUNSLOW BASED

Computerplan is a well-established supplier of commercial application packages and software tools for Data General Computer Systems and a major supplier of turnkey systems in South East England.

Applicants must have two/three year's programming experience in commercial applications on mini/micro computers in BASIC or COBOL. Experience of DG assembler would be an added advantage.

This job involves substantial customer contact and provides an excellent opportunity for the successful candidates to broaden their experience by working in a wide range of applications and system configurations.

Please contact John Bardell on 01-577 2826.

(2138)

Systems Programmer

Customer Services up to £10,000

As ITT's recently formed Programming Support Centre (PSC) we are creating a totally new software and systems resource capable of fulfilling the demanding and highly varied requirements of ITT's operational facilities throughout Europe.

From our base in Harlow, Essex, we develop, coordinate and issue the software packages used by over a thousand programmers across one of the world's more sophisticated organisations.

We are seeking an individual, who will become a key member of the Customer Services team which through extensive user contact is responsible for the management of release control, the creation of release libraries and the testing and physical transfer of software across the ITT network in Europe. Your role will centre on building the environment to facilitate this, along with the control and protection of a software library that currently contains over 800,000 lines of code, mainly PL/1 and Assembler.

So if you're a career orientated man or woman with at least 12 months experience of a large IBM mainframe environment and the ability to pick up PL/1 very quickly you can be sure we want to talk to you. If in addition you're already familiar with JCL or large network operations, so much the better.

To find out more about this genuine ground floor opportunity and the excellent career prospects it offers, contact Tim Davies, acting as adviser to the company at, Macmillan Davies, The Old Vaults, Parliament Square, Hertford SG14 1PU. Tel. (0992) 552552.

ITT Europe Programming Support Centre ITT

(2161)

300 PLUS VACANCIES

★ **MVS CONSULTANT** to £15,000 + Bonus + Car
Pre and Post Sales product support role. Around two to three years' MVS experience with either CICS or IMS exposure. UK based with some overseas travel.

★ **DPM City** to £12,000
Young analyst/programmer with circa three years' RPG II on System 34 to head small department. Financial systems background preferred.

★ **ANALYST/PROGRAMMERS** to £14,000 + mortgage
International banking environment. Solid RPG skills essential. Overseas travel opportunities.

★ **PL/1 PROGRAMMERS** to £11,500 + mortgage
Financial institution needs several PL/1 professionals with two and four years' experience. CICS and database exposure desirable for the senior level. Strong emphasis on career progression and training. Lots of new development projects in the pipeline.

★ **MVS/DS/DOS COBOL** £7,500 to £11,500 + Benefits
Several clients have urgent requirements for programmers with 18 months + COBOL either batch or online. Manufacturing, hospital and systems house environments.

★ **SYSTEMS ANALYST** to £12,000
Around three years' analysis and design experience in a mainframe environment. Hardware background not critical.

★ **JUNIOR ANALYST CENTRAL LONDON** £9,000 +
Systems House require 18 months + analysis experience. Programming background useful but not essential.

★ **DOS SYSTEMS PROGRAMMERS** to £13,000 + Mortgage
Around two years' DOS experience with good ASSEMBLER skills. Progressive site with advanced facilities and excellent working conditions.

★ **DATABASE ANALYST** to £12,000 + Mortgage
To develop a key role in database administration. Strong DP background + insurance or Banking experience essential.

To find out about these and all other 1983 vacancies call Ian Stubbs on 01-353 5605 (24 hours).

(2139)

EXECUTIVE FACILITIES LONDON LTD 01-353 5605

ASSISTANT GROUP AUDITOR

Salary £11,205 to £13,908 p.a. inc. (Ref. F58)

We are seeking an auditor with appropriate qualifications, and preferably with previous experience of computer audit, who can make a positive contribution to the development of systems and the use of data retrieval techniques.

The person appointed, who will be located within the Internal Audit Division comprising twenty staff, will be responsible for the audit of the computer installation, computer systems and the development of the computer audit function. The Council's systems use ICL 2900 computers with an extensive terminal network. Micro computers are also in use.

The Council is committed to an ambitious computer development programme involving the introduction this year of data based systems which include Financial Information (LAFIS) and Housing Management (HMIS).

Benefits include: Casual User Car Allowance, 35 hour week, flexitime.

For further information, or to arrange an informal visit contact Mr B. Coker, Assistant Director of Finance (Audit) on 01-274 7722 Extension 2219.

Application forms are obtainable from the Personnel Officer, Director of Finance, London Borough of Lambeth, 18 Brixton Hill, London SW2 1RL. Or telephone 01-274 7722 Extension 2001. Closing date 24th January, 1983.

As part of Lambeth's Equal Opportunities Policy, applications are welcome from people, regardless of disability, marital status, race or sex.

LAMBETH

(2140)

Inner London Education Authority
SOUTH THAMES COLLEGE
Wandsworth High Street
LONDON SW18 2PP

DEPARTMENT OF BUSINESS & COMMERCIAL STUDIES

Principal Lecturer in Computer Applications

Post ref: BCS/1-83

This person appointed will be responsible for the department's computer facilities. They will be required to develop the use of computers in all the department's courses. Applicants should be well qualified, have experience of computer applications in small business systems and be familiar with BEC and BEC/TEC courses. Training/teaching is desirable.

Salary: exact £11,631-£13,356 plus Inner London Allowance £294.

Application forms and further details may be obtained from the College Secretary (tel 01-874 2277 extension 43) to whom completed forms should be returned by 14 days of appearance of this advertisement. Please quote reference number.

SOUTH DEVON TECHNICAL COLLEGE - TORQUAY
REQUIRED IMMEDIATELY:

TEMPORARY LECTURER I COMPUTING SCIENCE/DATA PROCESSING

to teach both theory and practice in overseas, appreciation and applied courses up to A level G.C.E.
APPLICANTS SHOULD BE TRAINED TEACHERS, PREFERABLY GRADUATE. INDUSTRIAL OR COMMERCIAL EXPERIENCE WILL BE AN ADVANTAGE.
The post is temporary until August 31, 1983, in the first instance.
SALARY SCALE (Burnham F.E. Report):

LECTURER I £5,385-£9,297 per annum

(placing on scale according to qualifications and experience)

Further details and application forms, returnable by Friday, August 26, 1983, from Senior Administrative Officer, Newton Road, Torquay TQ2 5BY (SAE please).

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DEVELOPMENT MANAGER

MODULAR SYSTEMS

MINI & MICRO HARDWARE

LOCAL NETWORKS

(Middlesex) £13,000+ neg plus car

Our client – a profitable, autonomous subsidiary of a high-tech British Group – has employed a sophisticated approach to information systems to solve the problem of supporting some 30 operating units scattered around the UK, the Company has adopted a distributed processing strategy: using a small central team of co-ordinators and implementers and employing several commercial Software Houses, they have developed modular systems to run on stand-alone micros at remote sites. Every office in the Company now has access to computerised systems implemented either on mini or micro hardware, and these will soon be network linked.

To continue with the development and implementation of computerised systems throughout the Company, our client now seeks a Development Manager to take charge of one complete business sector. Leading a small in-house team and co-ordinating Software House efforts, he/she will investigate and satisfy user needs in liaison with local management at senior levels.

Your background should include independent responsibility for commercial systems analysis with an exposure to small machines and systems. At a personal level you should have the confidence and fluency to motivate your own staff, get the best out of your Software Houses and communicate effectively with users.

Reflecting the senior level and influential nature of this post, the remuneration package will include a Company car.

For a confidential discussion, telephone Gordon Hunter or Julian Turbin on Staines (0784) 62131 – or write to: BEAUMONT MANAGEMENT SERVICES LTD., 2/4 High St., Staines, Middx. TW18 4EE.

Computer Appointments made easier

B M S

LWCR

London West Computer Recruitment

VME/B Programmers Systems Programmers

Swindon Cardiff Hayes £8-10K

Immediate vacancies for programmers with minimum 1 year's VME/B experience exist with prestigious retailing group in Wiltshire and public authorities in S. Wales and Middlesex. Competitive salaries and involvement in large projects provide attractive opportunities for career development. Ref 506.

IBM A/Programmer

Devon £11K

Our client is an expanding group of companies on the Devon coast. An excellent opportunity exists for an A/programmer with a minimum 2 years' RPG II experience to work on IBM S/34 and S/38 machines. Excellent conditions and re-location assistance are offered. Ref 538.

IBM A/Programmers, Programmers

Oxford Plymouth £8-9K

Good opportunities with substantial manufacturing companies in attractive locations exist for Cobol programmers with 2-3 years' experience of on-line systems. Some knowledge of CICS and DL1 is required. Re-location assistance is available. Ref. 523.

DEC A/Programmers

Bristol £9.5K

Two vacancies with a progressive systems house exist for A/programmers. Experience of DEC PDP and/or VAX and Basic Plus is essential, the jobs involve team leading and client liaison. Salary, location and prospects are good. Ref 525.

Banking Analysts, A/Programmers

Central London £14K

A prestigious international bank seeks several analysts and A/programmers. Knowledge of international banking is essential; a minimum of 1 year's experience of RPG II or Cobol is required. Substantial benefits are offered by this large financial organisation. Ref 108.

HP Analyst, A/Programmer, Programmers

Reading Plymouth Kendal £7-10K

Our client in Devon seeks an analyst to be based in Plymouth and an A/programmer in Cumbria. Both positions require a minimum 1 year's HP experience (Cobol, Image, etc). Similar positions exist with a large Reading-based food processing company. Good conditions and promotion prospects. Ref 537.

IBM A/Programmer

Slough £10.5K

A manufacturing subsidiary of a multi-national group seeks an A/programmer for on-line systems development. Sound experience of Cobol and JCL is required, knowledge of CICS and/or IDMS would be an advantage. Conditions are good and promotion prospects are excellent. Ref 533.

IBM Programmers

Bracknell £7.5-8.5K

A large financial organisation seeks several programmers for on-line systems development leading to a network implementation. IBM Cobol experience is essential plus knowledge of one of OS/VS1, CMS, DL/1, Easytrieve or JCL. Very good conditions. Outstanding opportunity for large project experience. Ref 536.

(2113)

Write or telephone:
London West Computer Recruitment
Evergreen, Dauntsey, Chippenham, Wiltshire SN15 4JA. Telephone: (0249) 891114

Programmers · Analysts · Computer graduates...

Accelerate your career in SOFTWARE SUPPORT

Do you have talents as a communicator and problem-solver which you'd like to put to work alongside your technical skills? Then consider a career in software support with Hewlett-Packard, working from a Berkshire, Bristol or Birmingham base.

We need graduate-calibre people with a good knowledge of scientific or commercial applications to help our customers get the best out of the computer systems they buy from us. Although it would be valuable to have some experience of H-P products, what we're really looking for is the ability to explore wide-ranging software applications and to create a good working dialogue on the subject with anyone from a junior operator to the MD.

We will give you excellent training for this role – at the very least, 6 weeks at Hewlett-Packard centres in the UK, France and West Germany.

If you work on our largest computer systems such as the HP 3000 or HP 1000 range, you can also expect to become involved in pre-sales situations, providing expert advice and assistance to prospective customers.

Computer science or engineering graduates who have little or no working experience to offer will be considered for office-based trainee posts. These involve 9-12 months' practical training.

Whichever level you join at, you can anticipate rapid career development in a company which has grown by 35% in 1982 alone. Our products represent the most advanced technology in their respective markets, and future developments will keep us ahead.

If your career aims are a highly varied workload, plenty of personal contacts, quick advancement and constant technical challenge, you won't find a better opening than this.

Initial salaries would be up to £14,000 (or up to £9,500 for office-based roles), plus car on completion of training and a very valuable benefits package including Christmas bonus, twice-yearly profit-sharing bonus, discounted BUPA, and free pension and life assurance.

Either ring Wendy Owen for an application form on Wokingham (0734) 784774, or write to Judy Frank with full personal, career and salary details at Hewlett-Packard Limited, King Street Lane, Winnersh, Wokingham, Berkshire RG11 5AR.

HEWLETT PACKARD

Join the most Advanced ME29 Team in Grocery Distribution

Lowfield, one of the leading, and fastest growing, U.K. distribution companies has recently installed 11 ICL ME29s (with communications links to manufacturers, TMETP, IDMS and IPA) to support its Depot operations. Additionally twin DEC PDP11s are used for financial systems. Order and stock systems applications are being implemented, and development work is planned in the fields of warehousing, vehicle scheduling/costing and other information systems.

To sustain our operational and DP leadership in the industry, we need to fill the following new Daventry based posts –

Senior Analyst/ Designer (c.£10,000)

to investigate and specify business system requirements, planning and managing complete projects through to implementation using both in-house and contract programming staff. Business oriantated applicants, with a minimum of five years' experience (to include IDMS and TP applications) must be able to demonstrate successful completion, as team leader, of at least one major business system.

Technical Support Programmer (c.£9,000)

to provide technical support to 11 ME29s (including IDMS and TMETP) and 2 PDP11 systems, macro writing, network support, plus programming technical aspects of systems e.g. communications. Minimum 2-3 years' commercial experience required including ICL operating systems (TME in particular), CL macro writing and IDMS. PDP11 experience an advantage, but training available.

Senior Programmer/ Designer (c.£8,500)

to work within a design team to produce program specifications, programs, and undertake some systems programming. At least 2-3 years' COBOL experience required (to include IDMS in a TP environment) with evidence of team leader capability.

Programmer (£6,000 – £8,000)

to produce, from specifications, a wide range of programs and provide on-going support. 6 months – 2 years' commercial COBOL experience necessary including IDMS systems (TP environment).

Good career prospects/benefit package (part of Imperial Group). Relocation assistance available. Interviews outside normal hours possible.

Please write with full details (including present salary) to Personnel Manager, Lowfield Distribution Limited, 4-6 Church Walk, Daventry, Northants NN11 4BL.

(2156) **Lowfield**

Slough Corporation

Computer Manager

Circa £12,000

The successful applicant, male or female, will take charge of the Council's ME29/TME environment reporting directly to the Management Services Manager. This vacancy offers an exceptional opportunity to manage and promote an ICL installation with a Borough Council committed to major development.

We have a 3/4 megabyte ME29 Model 37 and have introduced the packages PLANAPS, QPG, QPAC and FILETAB amongst others. Most recently we have purchased ICL's DRS 20s in line with a developing strategy to provide our Departmental User with increased computer facilities.

Can you offer management experience or considerable potential, comprehensive experience of designing, programming and installing of ICL systems equipment; a sound knowledge of Cobol and TP, a committed approach and the personality to promote this installation to encourage users?

We offer a minimum of 26 days' holiday, flexible working hours and assistance with relocation expenses, as part of our comprehensive package.

Further details and application forms are obtainable from The Personnel Section, Town Hall, Bath Road, Slough. Tel. Slough 875071 (direct line).

Previous applicants need not re-apply

Closing date: 27.1.83

(2143)

GP-Elliott Electronic Systems Ltd.

(a member of the Angus Fire Armour Group of Companies)

We have, due to further expansion, a requirement for additional staff to join our Micro Section.

Software Project Support Engineers c.£8,500

To maintain our microprocessor equipment on oil platforms located in the North Sea, the Middle East and the rest of the world, we require a team of suitably qualified Software Engineers. Applicants should ideally be aged 25-40 and prepared to travel for periods ranging from one to six weeks, sometimes at short notice. They would also, when home based, be used "in-house" on software project work. A good basic salary is offered, together with excellent allowances for site work.

They should preferably have some basic knowledge of block structured programming languages, such as PLM and Pascal and Intel 8085/86 hardware.

These positions offer excellent prospects in a rapidly expanding high technology company. Other employment conditions include a 35 hour week, some paid overtime, 4½ weeks holiday, pension scheme.

Please write to: Mrs. Y. Moore, Personnel/Administration Manager, GP-ELLIOTT ELECTRONIC SYSTEMS LTD., Elliott House, 8 Deer Park Road, Merton, London SW19 3UT. Tel: 01-543 1241

(2169)

COMPUTER PLAN

ANALYST/PROGRAMMERS

£10-12K + BONUS SCHEME

DATA GENERAL COMMERCIAL SYSTEMS HOUNSLOW BASED

Computerplan is a well-established supplier of commercial application packages and software tools for Data General Computer Systems and a major supplier of turnkey systems in South East England.

Applicants must have two/three year's programming experience in commercial applications on mini/micro computers in BASIC or COBOL. Experience of DG assembler would be an added advantage.

This job involves substantial customer contact and provides an excellent opportunity for the successful candidates to broaden their experience by working in a wide range of applications and system configurations.

Please contact John Bardell on 01-577 2525.

(2138)

Systems Programmer

Customer Services up to £10,000

As ITT's recently formed Programming Support Centre (PSC) we are creating a totally new software and systems resource capable of fulfilling the demanding and highly varied requirements of ITT's operational facilities throughout Europe.

From our base in Harlow, Essex, we develop, coordinate and issue the software packages used by over a thousand programmers across one of the world's more sophisticated organisations.

We are seeking an individual, who will become a key member of the Customer Services team which through extensive user contact is responsible for the management of release control, the creation of release libraries and the testing and physical transfer of software across the ITT network in Europe. Your role will centre on building the environment to facilitate this, along with the control and protection of a software library that currently contains over 500,000 lines of code, mainly PL/1 and Assembler.

So if you're a career orientated man or woman with at least 12 months experience of a large IBM mainframe environment and the ability to pick up PL/1 very quickly, you can be sure we want to talk to you. If in addition you're already familiar with JCL or large network operations, so much the better.

To find out more about this genuine ground floor opportunity and the excellent career prospects it offers, contact Tim Davies, acting as adviser to the company at, Macmillan Davies, The Old Vaults, Parliament Square, Hertford SG14 1PU. Tel. (0992) 552662.

ITT Europe-Programming Support Centre ITT

(2141)

300 PLUS VACANCIES

★ **MVS CONSULTANT** to £15,000 + Bonus + Car
Pre and Post Sales product support role. Around two to three years' MVS experience with either CICS or IMS exposure. UK based with some overseas travel.

★ **DPM** City to £12,000
Young analyst/programmer with circa three years' RPG II on System 34 to head small department. Financial systems background preferred.

★ **ANALYST/PROGRAMMERS** to £14,000 + mortgage
International banking environment. Solid RPG skills essential. Overseas travel opportunities.

★ **PL/1 PROGRAMMERS** to £11,500 + mortgage
Financial institution needs several PL/1 professionals with two and four years' experience. CICS and database exposure desirable for the senior level. Strong emphasis on career progression and training. Lots of new development projects in the pipeline.

★ **MVS/OS/DOS COBOL** £7,500 to £11,500 + Benefits
Several clients have urgent requirements for programmers with 18 months + COBOL either batch or online. Manufacturing, financial and systems house environments.

★ **SYSTEMS ANALYST** to £12,000
Around three years' analysis and design experience in a mainframe environment. Hardware background not critical.

★ **JUNIOR ANALYST** CENTRAL LONDON £9,000 +
Systems House required 18 months + analysis experience. Programming background useful but not essential.

★ **DOS SYSTEMS PROGRAMMERS** to £13,000 + Mortgage
Around two years' DOS experience with good ASSEMBLER skills. Progressive site with advanced facilities and excellent working conditions.

★ **DATABASE ANALYST** to £12,000 + Mortgage
To develop a key role in database administration. Strong DL/1 background + insurance or Banking experience essential.

To find out about these and all other 1983 vacancies call Ian Stubbs on 01-353 5605 (24 hours).

(2137)

EXECUTIVE FACILITIES LONDON LTD 01-353 5605

ASSISTANT GROUP AUDITOR

Salary £11,205 to £13,305 p.a. inc.
(Ref. F58)

We are seeking an auditor with appropriate qualifications, and preferably with previous experience of computer audit, who can make a positive contribution to the development of systems and the use of data retrieval techniques.

The person appointed, who will be located within the Internal Audit Division comprising twenty staff, will be responsible for the audit of the computer installation, computer systems and the development of the computer audit function. The Council's systems use ICL 2900 computers with an extensive terminal network. Micro computers are also in use.

The Council is committed to an ambitious computer development programme involving the introduction this year of data based systems which include Financial Information (LAFIS) and Housing Management (HMIS).

Benefits include: Casual User Car Allowance, 35 hour week, flexitime.

For further information, or to arrange an informal visit contact Mr B. Coker, Assistant Director of Finance (Audit) on 01-274 7722 Extension 2219.

Application forms are obtainable from the Personnel Officer, Director of Finance, London Borough of Lambeth, 18 Brixton Hill, London SW2 1RL. Or telephone 01-274 7722 Extension 3061, Closing date 24th January, 1983.

As part of Lambeth's Equal Opportunities Policy, applications are welcome from people regardless of disability, marital status, race or sex.

LAMBETH

(2142)

Inner London Education Authority
SOUTH THAMES COLLEGE
Wandsworth High Street
LONDON SW18 2PP

DEPARTMENT OF BUSINESS & COMMERCIAL STUDIES

Principal Lecturer in Computer Applications
Post ref: BCS/1-83

The person appointed will be responsible for the department's computer facilities. They will be required to develop the use of computers in all the department's courses.

Applicants should be well qualified, have experience of computer applications in small business systems and be familiar with BEC and BEC/TEC courses.

Relocation/teaching is desirable.

Salary scale: £11,631–£12,390 plus inner London Allowance £634.

Application forms and further details obtainable from the Principal's office quoting reference number 16 days of appearance of advertisement. Please send s.a.e. Closing date 24th January 1983.

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TEMPORARY LECTURER I COMPUTING SCIENCE/DATA PROCESSING

to teach both theory and practice in awareness, appreciation and application courses up to A level G.C.E.

APPLICANTS SHOULD BE TRAINED TEACHERS, PREFERABLY GRADUATES. INDUSTRIAL OR COMMERCIAL EXPERIENCE WILL BE AN ADVANTAGE.

SALARY SCALE (Burnham F.E. Award):

LECTURER I £8,385–£9,267 per annum
(placing on scale according to qualifications and experience)

Further details and application forms, returnable by Friday, January 28, 1983, from Senior Administrative Officer, Newton Road, Torquay TQ2 5ET (s.a.e. please).

(2140)

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Our client – a profitable, autonomous subsidiary of a high-tech British Group – has employed a sophisticated approach to information systems: to solve the problem of supporting some 30 operating units scattered around the UK, the Company has adopted a distributed processing strategy: using a small central team of co-ordinators and implementers and employing several commercial Software Houses, they have developed modular systems to run on stand-alone micros at remote sites. Every office in the Company now has access to computerised systems implemented either on mini or micro hardware, and these will soon be network linked.

To continue with the development and implementation of computerised systems throughout the Company, our client now seeks a Development Manager to take charge of one complete business sector. Leading a small in-house team and co-ordinating Software House efforts, he/she will investigate and satisfy user needs in liaison with local management at senior levels.

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BMS

Computer Appointments made easier

LWCR

London West Computer Recruitment

VME/B Programmers Systems Programmers
Swindon Cardiff Hayes £8-10K
Immediate vacancies for programmers with minimum 1 year's VME/B experience exist with prestigious retailing group in Wiltshire and public authorities in S. Wales and Middlesex. Competitive salaries and involvement in large projects provide attractive opportunities for career development. Ref 506.

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London West Computer Recruitment
Evergreen, Dauntsey, Chippenham, Wiltshire SN15 4JA. Telephone: (0249) 891114

Banking Analysts, A/Programmers
Central London £14K
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Bracknell £7.5-8.5K
A large financial organisation seeks several programmers for on-line systems development leading to a network implementation. IBM Cobol experience is essential plus knowledge of one of OS/VS1, CMS, DL/1, Easytrieve or JCL. Very good conditions. Outstanding opportunity for large project experience. Ref 536.

(2113)

Programmers · Analysts · Computer graduates...

Accelerate your career in SOFTWARE SUPPORT

Do you have talents as a communicator and problem-solver which you'd like to put to work alongside your technical skills? Then consider a career in software support with Hewlett-Packard, working from a Berkshire, Bristol or Birmingham base.

We need graduate-calibre people with a good knowledge of scientific or commercial applications to help our customers get the best out of the computer systems they buy from us. Although it would be valuable to have some experience of H-P products, what we're really looking for is the ability to explore wide-ranging software applications and to create a good working dialogue on the subject with anyone from a junior operator to the MD.

We will give you excellent training for this role – at the very least, 6 weeks at Hewlett-Packard centres in the UK, France and West Germany.

If you work on our larger computer systems such as the HP3000 or HP 1000 range, you can also expect to become involved in pre-sales situations, providing expert advice and assistance to prospective customers.

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Whichever level you join at, you can anticipate rapid career development in a company which has grown by 35% in 1982 alone. Our products represent the most advanced technology in their respective markets, and future developments will keep us ahead.

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Either ring Wendy Owen for an application form on Wokingham (0734) 784774, or write to Judy Frank with full personal, career and salary details at Hewlett-Packard Limited, King Street Lane, Winnersh, Wokingham, Berkshire RG11 5AR.

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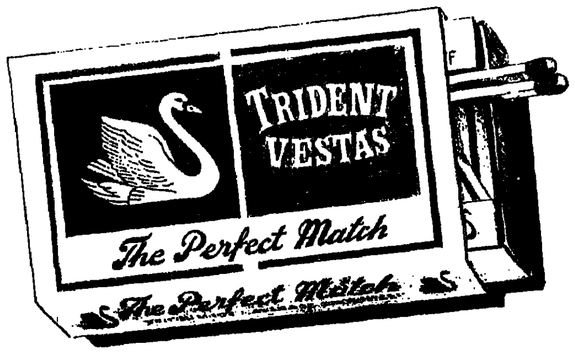

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HP3000 IMAGE COBOL Programmers
IBM ASSEMBLER with PL/1 Analyst/Programmers
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IBM SYSTEM Programmers
IBM COBOL Programmer Analyst with RAMIS
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IBM OS COBOL some with TSO/SPF
IBM COBOL with IMS DB/DC some with ADF

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ICL VMEB Analysts & Programmers
with IDMS, 20+, urgently required

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IBM COBOL CICS/DL1 Programmers
IBM MANTIS Programmers
IBM PL1 and FOCUS
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IBM SYSTEM 38 RPG III
IBM OS with DATA MANAGER
ICL 1500 BASIC Programmers
ICL SYSTEM 25 Designer & Progs
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MICHAEL JACKSON structured programming techniques preferably with DOS COBOL DL1 & CICS
PAYROLL expertise Analyst/Programmers
Software Engineers with INTEL 8086
Technical Author DEC ASSEMBLER
UNIPAY Analyst/Progs with PL1
UNIVAC 1100 DMS COBOL Programmers
VAX, VMS, BASIC + 2 or COBOL

URGENT
IBM 8100 DPCX Programmers

Contact: STEVE WHITING, STEVE CASEY, PETER HOLLIDAY, CHRIS WHETHERLY, DAVE LONKHURST, DEREK WADHAM, SANDRA CAREY or EILEEN CARMICHAEL.

Or contact Ray Glen in our London office
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and LEVEL 6 SCREENWRITE for Scotland
IBM 8100 DPPX
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ICL VMEB COBOL with IDMS
IMS DB/DC with ADF
System Designers with COBOL, CICS & DL1
UNIVAC 1100 DMS, TIP COBOL
Operators for Birmingham with DEC RSX 11M or NCR VRX or Honeywell L64 GCOS

Contact: NEIL SMITH, DAVE PARKER or KAREN LONGCROFT

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Contact: ALAN PAINE or CHRIS MAGEE

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Analyst/Programmers to £13K, West London, preferably with IBM background but will consider any strong COBOL experience.

ICL Support Technicians to £11.5K, Berkshire.

Contact Peter Jezeph for an immediate, confidential interview, or write enclosing a detailed c.v.

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"IF VARIETY BE THE SPICE OF LIFE – READ ON . . ."

Our client is one of the most successful and rapidly expanding British Software houses.

Having recently landed a hotly contested major project for a top Hardware manufacturer, they are currently seeking people with **2 or more years' programming experience** on any commercial Mini or Mainframe to work on the design and implementation of a wide variety of Systems.

Specific experience of financial and/or insurance applications would be particularly useful.

In any case, Starting Salaries are up to **£12,000** and prospects for advancement will be limited only by your ability and commitment.

If you have the right background, are highly self-motivating with good inter-personal skills and are looking to optimise your career possibilities, contact us now quoting Ref 6495.

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR 01-499 7761

[2136]

GEC Midland Computer Services Limited

GEC Computer Centre, Stafford

For further details; Please ring either Barry Turton on 0270 627206 during the day, or on Alsager 4743 evenings and weekends, or Colin Hood at GEC Midland Computer Services Ltd on Stafford 48131 Ext 205.
Alternatively, write to Barry Turton at the address below:

General Manager-Operations
Systems Support Manager
User Support Manager
Systems Programmers

STAFFORD BASED

ATTRACTIVE SALARIES, BENEFITS AND RELOCATION PACKAGE

Our Client provides a complete computing service for all types of commercial and technical work to GEC Companies throughout the UK from its Computer Centre located on a greenfield site in Stafford.

The installation, based on a dual IBM 3033 configuration, provides facilities for Batch, TSO and IMS to users via a large VTAM Network. Following changes in company organisation a number of key opportunities have arisen.

The successful candidates will probably be educated to degree standard or equivalent and have several years relevant experience in Data Processing.

GENERAL MANAGER-OPERATIONS
A manager is required to undertake responsibility for all aspects of operations within the Computer Centre. Applicants for this senior appointment must be able to demonstrate qualities of leadership and organisational ability which have resulted in significant achievements. A clear understanding of IBM Hardware, Systems Software and Telecommunications would be an advantage.

SYSTEMS SUPPORT MANAGER
The Systems Support Group is responsible for the development and maintenance of all the Software for the System Control Programs including Tele-processing. A Manager is required to take charge of the dedicated team of Systems Programmers who carry out this work. This is a demanding position which calls for a wide experience of System Software coupled with proven abilities of leadership. Candidates should have had a thorough grounding in MVS, IMS and VTAM and be capable of rapid and decisive action.

USER SUPPORT MANAGER
This is a new appointment to develop and manage a small team providing technical support, training and general advice and guidance on the facilities provided by the Centre to users. Candidates must be familiar with IBM software and in particular with TSO and IMS, together with a working knowledge of telecommunications.

SYSTEMS PROGRAMMERS
Vacancies exist for experienced Systems Programmers to join the Support Group where the work is challenging and often at the forefront of the technology.

Experience of implementing, supporting or developing one or more of the following systems is sought:-

MVS, IMS, JES2, VTAM, NCP, ACF2, HSM

In addition to technical ability, experience of project leadership within the field of systems software would be a significant advantage.

Stafford is a pleasant town offering a wide variety of low cost housing. It is easily accessed from the M6 and on the main Inter-City railway line. The surrounding countryside is extremely attractive with Cannock Chase, a well known beauty spot being just a few miles away, and Derbyshire and Wales within easy reach.

Career prospects are excellent in this growing organisation. Salaries and conditions of employment are attractive and relocation assistance will be offered where appropriate.

[2144]

OCC
Specialists since 1971 in UK and International computer & technical appointments

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(0270) 627 206

Cincom Systems

Cincom Systems is the leading independent supplier of database, data communications and applications software to IBM users. Products include ENVIRON/1, TOTAL, MANTIS and MRPS. In fact, TOTAL is the most successful independent software product ever in the history of the annual ICP award ceremony with sales in excess of $250 million. Cincom have for many years been strong in the IBM market and are always interested in applicants with IBM, CICS, and ENVIRON/1 experience.
The company has plans to expand market share of a wide range of products to ICL and DEC users. To maintain and boost the drive to advanced software compatibility the UK Technical Centre now seeks DEC and ICL software design specialists

ADVANCED SOFTWARE DEVELOPMENT

ICL/VME PROGRAMMER/DESIGNERS
£8,000 to £13,000

To join a Maidenhead-based team working on the improvement of existing products and the design of new software systems for ICL 2900 (VME) and ME29 (TME) users
Ideal applicants will be systems software specialists with the ability to work in a dedicated development environment but, in addition, with an awareness of commercial DP concepts since, as users acquire new software, the team will increasingly take on a client support and problem-solving role.
Technically, you should have in-depth familiarity with the ICL 2900 range, VME operating system and COBOL programming. Knowledge of SFL, PASCAL and/or PL1 would be an added advantage.

DEC/VAX SYSTEMS DESIGNERS
£8,000 to £13,000

To join Cincom's European DEC development effort - also based in Maidenhead. The team is designing systems tools for VAX/VMS users - principally an integrated management information system
You should be familiar with VAX hardware and be fluent in COBOL or PASCAL programming. Knowledge of 'C' would also be beneficial - the language will be used increasingly in future development work.

To discuss these opportunities - all of which carry immediate BUPA coverage and the probability of company car provision after one year - contact Cincom's recruitment advisors:

Gordon Hunter or Julian Turbin at Beaumont Management Services Ltd., 2-4 High St., Staines, Middx. TW18 4EE.

Staines (0784) 62131.

Computer Appointments made easier

Duncan Bransom Ltd. will be continuing their expansion throughout 1983 and are now looking for

2 Systems Analysts c.£15,000
2 Analyst Programmers c.£12,000

The company, formed in 1974, has dedicated itself to the production of applications software of the highest quality, mainly for IBM mainframes. To cope with the steady demand for its services and the growth planned for 1983 there are now vacancies for two systems analysts and two analyst programmers.

Successful applicants will have had two or three years working in one or other of these capacities. Experience on IBM machines using CICS, DL1, COPICS or ADABAS would be an advantage but this is not essential.

If you are looking to join a small dynamic organisation where, through your ability and hard work, you seek to progress to the top, this could be the opportunity for you.

A pleasant stable working environment is maintained where people can develop their professional skills whilst earning good money. Staff turnover is low – the company has only lost four people in nine years.

You should be prepared to work either in our offices in Potters Bar or on the premises of our clients, most of whom are located in the London area.

There are the usual fringe benefits including a profit sharing scheme. Please contact **Roger Griffiths on 01-502 0325 or Martin Hole on 0707 44681** to discuss a possible appointment, or write sending brief details of your career to date. Under no circumstances will your present employer be approached without first obtaining your permission in writing.

Duncan Bransom Limited
A company you can grow with

Head Office: 57 Hillcrest Road, Loughton, Essex. Tel. 01-502 0325
Potters Bar Office: Howe House, Mutton Lane, Potters Bar, Hertfordshire EN6 2BR. Tel. 0707 44681
London Office: 102 Newgate Street, London EC1A 7AP. Tel. 01-248 8900

(2114)

Nottinghamshire County Council
ARNOLD AND CARLTON COLLEGE OF FURTHER EDUCATION
Re-advertisement

LECTURER
Grade I £5389-£9267
COMPUTING

Required for April, 1983, or as soon as possible thereafter. Applicants should be well qualified and should have recent practical experience in the use of small computer systems. The post involves teaching on a wide range of courses including GCE 'A' level Computing Science, BEC/TEC Diploma in Computer Studies and specialist courses for businessmen, etc. Teaching of computer programming will be involved and applicants should have a thorough knowledge of at least two programming languages.

Entry point on the salary scale according to qualifications and experience.

Application forms and further particulars are available from the Principal at Arnold and Carlton College, Digby Avenue, Mapperley, Nottingham NG3 6DR, telephone Nottingham (0602) 876602. Closing date 28th January, 1983.

(2120)

Format

SALES EXECUTIVE
Word Processing, Telex Automation

WITH plans already well advanced to launch two major microprocessor systems early in '83, Format Communications offers tremendous growth potential for an experienced young Sales Executive with drive and initiative.

If you are aged between 25 and 35 and have proven sales ability in either word processing or communications systems, Format – a leader in the field – has a unique opening to join its specialist team.

The post is London-based, with good salary, benefits and excellent career prospects. Write in first instance enclosing CV, to David M Berry, Sales Manager, Format Communications, 68 Cannon Street, London EC4. Tel (01) 248-5516.

MCS AUTHORISED digital COMPUTER DISTRIBUTOR

LONDON AND MANCHESTER — **£7,000 to £14,000**
(plus 12.5 per cent London Weighting)

Management control systems is a successful authorised DEC computer distributor with a rapidly expanding £4million a year turnover. We are based in the North and South of England, with clients throughout the country, and require staff at all levels in both London and Manchester.
We have vacancies for professional staff to work on DEC RSTS/E and VAX/VMS on-line commercial systems. This is a unique opportunity to become involved in a variety of interesting projects, which are to be developed using the latest equipment and techniques. You will work mainly on MCS premises using our computers for development, and travel to our clients' sites for implementation support.
A knowledge of DEC systems is a positive advantage.
There is a Company Car Scheme, Private Patients Plan, Pension Scheme, Profit Share and Provision of Free Lunch Facilities.
The working environment is pleasant and our low staff turnover reflects the satisfaction of our existing staff.

SYSTEMS ANALYSTS/PROJECT LEADERS — **To £14,000**
Proven ability in implementation of on-line distribution or manufacturing systems.

PROGRAMMER/ANALYSTS — **To £11,000**
At least 3 years' experience of on-line commercial applications on the development of RSTS/E systems using BASIC PLUS.

PROGRAMMERS — **To £9,000**
At least 1 year's programming experience on the development of on-line commercial applications using COBOL or BASIC.

For London vacancies contact: Marilyn Cullen, 4th Floor, Bilton House, 54/56 Uxbridge Road, Ealing, London W5 2TT. Tel. No. 01-840 8282 (twenty lines) (reverse charge)

For Manchester vacancies contact: Jane Smythe, 3 Wynnsley Grove, Fallowfield, Manchester M14 6XG. Tel. No. 061-248 7100 (reverse charge)

(2119)

LOLA

LOLA (London On-line Local Authorities) provides computer facilities to four London Boroughs. On-line updating of complex databases is provided on some 250 remote VDUs with PL/1 programs running under IMS/VS. Current equipment is a 6-megabyte IBM 370/158AP (due for replacement in 1983) and an IBM 4341 model II running under MVS/SP. TSO (SPF) is currently used for program development.
Currently we have two vacancies:

Programming Group Leader
£11,457 - £13,083 incl.

This vacancy is in the Applications Division and applicants for this senior post must have at least four years' experience in PL/1 (OS using IPT and have worked in a teleprocessing environment, preferably IMS/DC).
For further details please contact Philip Gorin, on Ext. 234.

Technical Group Leader
£11,457 - £13,083 incl.

This post is in the Technical Services Section and is responsible for all database support within the organisation. Applicants must have experience in database design and a good working knowledge of IMS and PL/1.
For further details or an informal discussion of the opportunity, contact Dave Goodall, on Ext. 277.
Application forms from:
Beryl Dorrington
FREEPOST
LOLA
Tower Point North
Sydney Road
Enfield EN2 6UE
Tel: 01-366 6611 (Ext. 276)
Closing date for receipt of completed applications, 28 January, 1983.

LOLA

(2156)

MVS SYSTEMS PROGRAMMER

£8,300 – £12,000 plus car scheme
Milton Keynes

V.A.G (United Kingdom) Limited, the sole importers of Audi and Volkswagen products into the United Kingdom, requires an additional MVS Systems Programmer to join a team of highly skilled specialists within its Technical Support Group.
The company operates twin 8 MB IBM 3031 mainframes supporting both our head office functions and a 600 terminal TP network.
Our extensive range of software includes CICS/VS and ACF/VTAM with NCP, operating under MVS, we also use ROSCOE, Librarian, Total Database and MANTIS, with program development in COBOL and BAL.
In addition to the salary and car scheme, other benefits include flexible working hours, pension and life assurance plans and, when necessary, relocation expenses to this interesting area where you can choose between modern city housing or more traditional accommodation in surrounding villages.
Applicants should have at least two years experience of software support in an MVS environment. Knowledge of BAL is essential and familiarity with CICS/VS will be a distinct advantage.
If you have the right qualifications and wish to work in a dynamic and challenging environment, please write giving brief career details to Gordon Greenwood, V.A.G (United Kingdom) Limited, Yeomans Drive, Blakelands, Milton Keynes, Bucks. MK14 5AN, or telephone him on Milton Keynes (0908) 679121.

V·A·G Audi

(2104)

SURREY EDUCATION COMMITTEE
GUILDFORD COUNTY COLLEGE OF TECHNOLOGY
Stoke Park, Guildford, Surrey GU1 1EZ
(Guildford 31251)

REQUIRED, from 1st May, 1983, or as soon as possible thereafter:

SENIOR LECTURER in COMPUTER STUDIES

to teach mainly business applications of computers on courses throughout the College.
Salary: £10,173-£12,816 (salary bar at £11,964) plus £231 fringe area allowances
Generous relocation expenses available in approved cases.
Application form and further details from the Principal, on receipt of SAE. Closing date – Monday, 31st January, 1983.
Re-advertisement

(2103)

TECHNICAL MANAGER

Small company in S.W. London looking for a dynamic ideally thirtyish person

to – organise and motivate a team of permanent and contract programmers writing programs for a wide range of home micros
– bring technical innovation and initiative to bear on the company's business

Minimum 5 years' computing experience with two on micro software, some hardware design knowledge, some management/team leadership experience required.
Salary c£12,000 plus bonus plus share option.
Contact Peter Lever on 01-876 0102 or send cv to A.S.K. at London House, 42 Upper Richmond Road West, London SW14 8DD

(2133)

DEC SYSTEM SPECIALISTS/CONSULTANTS

Redkite is one of the leading RSX software consultancies in the U.K., with agents and distributors overseas.
We are seeking DEC system specialists with wide experience in system design, tuning and on-site problem solving to operate nationally and possibly internationally. In addition to support activities, some design and implementation of new software technology is to be expected. Salary negotiable, based on abilities and experience.
Current company expansion will provide excellent opportunities for those applicants seeking a rewarding position with real growth potential and involvement. Successful applicants will become involved in a varied, interesting and flexible work environment and are likely to be based in the Western Home Counties.

(2170)

Contact REDKITE SOFTWARE LTD., 59 Kilvey Terrace, St. Thomas, Swansea, SA1 6BA. 0792-465853

CITY TREASURY

PRINCIPAL SYSTEMS ANALYST
£10,071-£11,184
SENIOR SYSTEMS ANALYST
£9,504-£10,071

The Data Processing Division provides a wide and growing range of computing services to the City Council. The development of on-line facilities in a number of new areas is under active investigation and the successful applicants will be required to contribute to this important work. The Principal Systems Analyst will also have responsibility for the training and supervision of staff.
Candidates should have suitable qualifications and extensive experience in the development of commercial computer systems and be able to adopt a rigorous approach to comprehensive and detailed investigations.
'Home moving' allowances up to £1,250 payable in appropriate cases as is a temporary lodging allowance.
The City Council is an Equal Opportunity Employer and welcomes applications irrespective of race, sex, marital status or disability.
Application forms, returnable by 24th January, 1983, may be obtained from the City Treasurer, P.O. Box 1, Municipal Buildings, Dale Street, Liverpool L69 2DG. (051-227 3911 ext 409).

CITY OF Liverpool

(2137)

BERKSHIRE EDUCATION COMMITTEE
BRACKNELL COLLEGE
Department of Business, Catering & General Studies

LECTURER II in COMPUTING STUDIES

to teach to a wide range of business studies courses. Applications are invited from graduates or professionally qualified persons.
Salary: £5868-£9480
Assistance with housing and removal assistance may be given.
Further particulars and application forms, which should be returned within 14 days of the appearance of this advertisement from the Principal, Bracknell College, Church Road, Bracknell, Berks. RG12 1DJ. Tel: 0344 20411.

(2102)

BOX NUMBERS
Box number replies should be addressed to:
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c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

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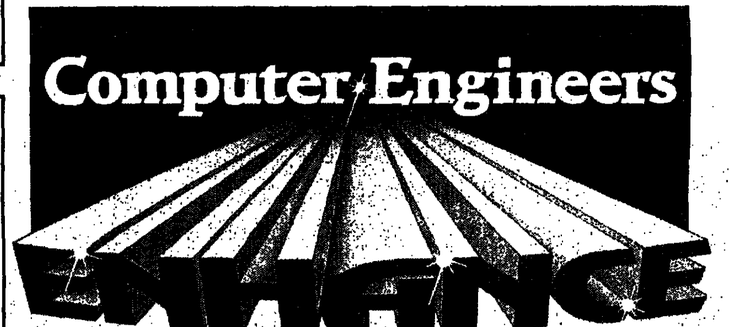
Phone:
John Garrett or Peter Newton on 01-947 9611 (24 hours)
or write to:
PROLOG Systems Limited, Free Post, Beaumont House, 177 Arthur Road, Wimbledon Park, London SW19 8BR

prolog

(2101)

Computer Engineers



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We have done more than any other computer or word processing company to create the office technologies which bring real benefits in business efficiency. We have made these technologies available on highly advanced 16 and 32 bit systems, some with mainframe capability, and there are further developments in the pipeline.
Despite remarkable technology, WANG's massive growth – 12-fold in 6 years and still continuing – could not have been achieved without the sheer hard work involved in marketing, selling and servicing our products. The men and women whose commitment and contribution made all the difference have been well rewarded – with attractive pay and conditions, career development opportunities, and the security of being key staff in a sound, dynamic, worldwide company.
You could enhance your career as a Customer Engineer with WANG.

your prospects as we advance our systems

£7-11,000 +car+OT+benefits

WANG

Whether you have one or ten years' experience in computer, WP, peripherals or related electronic engineering, we will bring out the very best in you through personal training and development and a fair, regular system of performance assessment and salary review.
You will be considered, on merit, for promotion when opportunities arise – and arise they will. Our growth to date will continue in the future, as we develop the massive potential market for office automation.
Opportunities now exist in London, Manchester, Birmingham, Ipswich and Ashford, Kent for all levels of Computer Engineers. Salaries will depend on qualifications and experience, and benefits include overtime payments, Vauxhall Caveller hatchback, BUPA, pension, life assurance and stock purchase schemes.
Please send cv to Peter Gorton, WANG (UK) Ltd., WANG House, 661 London Road, Isleworth, Middlesex TW7 4EH.
Or telephone 01-235 3570 (anytime, day or night, seven days a week) for an application form and product details.

THE OFFICE AUTOMATION COMPUTER COMPANY

(2109)

Cincom Systems

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Duncan Bransom Limited
A company you can grow with

Head Office: 37 Hillcrest Road, Loughton, Essex. Tel: 01-502 0325.
Potters Bar Office: Hoval House, Mutton Lane, Potters Bar, Hertfordshire, EN6 2BR. Tel: 0707 44681.
London Office: 102 Newgate Street, London, EC1A 7AP. Tel: 01-440 9500.

(2114)

Nottinghamshire County Council
ARNOLD AND CARLTON COLLEGE OF FURTHER EDUCATION
Re-advertisement

LECTURER
Grade I £5355-£9267
COMPUTING

Required for April, 1983, or as soon as possible thereafter. Applicants should be well qualified and should have recent practical experience in the use of small computer systems. The post involves lecturing on a wide range of courses including GCE 'A' level Computing Science, BEC/TEC Diploma in Computer Studies and specialist courses for businessmen, etc. Teaching of computer programming will be involved and applicants should have a thorough knowledge of at least two programming languages.

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(2120)

Forrest

SALES EXECUTIVE
Word Processing, Telex Automation

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PROGRAMMERS — **To £9,000**
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For London vacancies contact:
Marilyn Collen
4th Floor, Bilton House
54/56 Uxbridge Road
Ealing
London, W5 2TT
Tel. No: 01-840 3322
(reverse charge)

For Manchester vacancies contact:
Jane Smythe
3 Wynnstay Grove
Fallowfield
Manchester
M14 6XG
Tel. No: 061-248 7100
(reverse charge)

(2119)

LOLA

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Beryl Dorrington
FREEPOST
LOLA
Tower Point North
Sydney Road
Enfield EN2 6UE
Tel: 01-366 6611 (Ext. 278)

Closing date for receipt of completed applications, 28 January, 1983.

(2156)

CITY TREASURY

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£10,071-£11,184
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£9,504-£10,071

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CITY OF Liverpool

(2137)

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£8,300 – £12,000 plus car scheme
Milton Keynes

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V·A·G Audi

(2104)

SURREY EDUCATION COMMITTEE
GUILDFORD COUNTY COLLEGE OF TECHNOLOGY
Stoke Park, Guildford, Surrey GU1 1EZ
(Guildford 31281)

REQUIRED, from 1st May, 1983, or as soon as possible thereafter;

SENIOR LECTURER in COMPUTER STUDIES

to teach mainly business applications of computers on courses throughout the College.
Salary: £10,173-£12,615 (salary bar at £11,904) plus £231 fringe area allowances
Generous relocation expenses available in approved cases.
Application form and further details from the Principal, on receipt of SAE. Closing date – Monday, 31st January, 1983.

Re-advertisement

(2103)

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BRACKNELL COLLEGE
Department of Business, Catering & General Studies

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(2102)

BOX NUMBERS
Box number replies should be addressed to:
Box Number .....
c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

TECHNICAL MANAGER

Small company in S.W. London looking for a dynamic ideally thirtyish person
to – organize and motivate a team of permanent and contract programmers writing programs for a wide range of home micros
– bring technical innovation and initiative to bear on the company's business
Minimum 5 years' computing experience with two on micro software, some hardware design knowledge, some management/team leadership experience required.
Salary c£12,000 plus bonus plus share option.
Contact Peter Lever on 01-876 0102 or send cv to A.S.K. at London House, 42 Upper Richmond Road West, London SW14 8DD

(2133)

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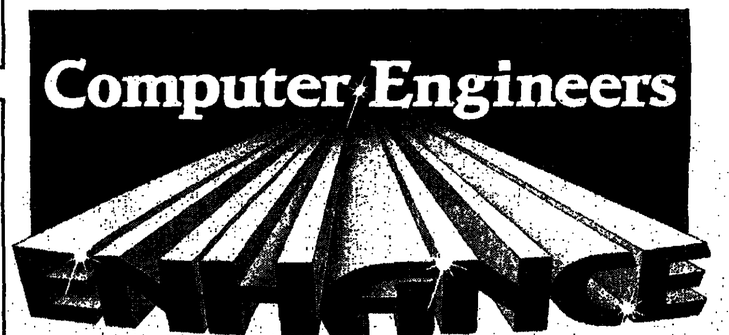
(2170)

Contact REDKITE SOFTWARE LTD., 59 Kilvey Terrace, St. Thomas, Swansea, SA1 8BA. 0792-465855

Computer Engineers



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You could enhance your career as a Customer Engineer with WANG.

your prospects as we advance our systems

Whether you have one or ten years' experience in computer, WP, peripherals or related electronic engineering, we will bring out the very best in you through personal training and development and a fair, regular system of performance assessment and salary review.
You will be considered, on merit, for promotion when opportunities arise – and arise they will. Our growth to date will continue in the future, as we develop the massive potential market for office automation.
Opportunities now exist in London, Manchester, Birmingham, Ipswich and Ashford, Kent for all levels of Computer Engineers.
Salaries will depend on qualifications and experience, and benefits include overtime payments, Vauxhall Cavalier hatchback, BUPA, pension, life assurance and stock purchase schemes.

£7-11,000 +car+OT+benefits

Please send cv to Peter Gorton, WANG (UK) Ltd., WANG House, 661 London Road, Isleworth, Middlesex TW7 4EH. Or telephone 01-235 3570 (anytime, day or night, seven days a week) for an application form and product details.

WANG

THE OFFICE AUTOMATION COMPUTER COMPANY

(2109)

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Wimbledon Park, London SW19 8BR.

prolog

(2101)

Northern Star

Northern Star have been involved with general insurance for over twenty years, and during that time have built a reputation for stability and success.

In the early months of 1983, they are moving from their present headquarters in Croydon, to the attractive City of Gloucester. This move creates a number of exciting opportunities within the Data Processing department, and gives the successful candidates the opportunity to relocate to this beautiful part of the country.

The D.P. environment at Northern Star is IBM 4341 running under DOS/VSE and VM/CMS using COBOL, CICS and DL/1. The complexity and scale of the company's operations provides a continual and growing challenge to the development teams.

To make your move to Gloucester an easy one, Northern Star will pay full relocation costs. Also included in the benefits package are 5% annual bonus, non contributory pension, mortgage subsidy and LV's.

APPLICATIONS CONSULTANT to 14K

You are probably an analyst with 4-5 years specific experience of Insurance Systems.

As an Applications Consultant for Northern Star you will manage all aspects of a specific business area. Your duties will include project control, user liaison, trouble-shooting, analysis, and design.

You are self-motivated, with the ability to communicate effectively at all levels.

CHIEF PROGRAMMER to 14K

You are currently a Senior Programmer with 4-5 years COBOL experience, and at least two years involvement with CICS, and DL/1.

As a Chief Programmer with Northern Star you will be the "competence centre" in programming. You will exploit your supervisory skills, and give advice on training and standards. You will liaise with applications consultants and be heavily involved in design and program development.

ANALYST/PROGRAMMER to 11K

You are working as an analyst/programmer, or junior analyst, and have a year's experience of both analysis and COBOL programming (IBM experience is not a necessity). Preferably, you have an insurance background, but if not, and you're good enough, we will train you.

At Northern Star you will be taking projects from feasibility through to implementation. You will be required to do some programming, but your main duties will involve user liaison, and the design and testing of systems.

For more information and immediate interview telephone Andy Beacham on 01-734 7394 during office hours or on 01-223 8507 evenings and weekends.

WARWICK WOODWARD

TELEPHONE: 01-734 7394

YOU.

Your Skills Programming; Operations; Analysis; Database; Courses; Technical Sales; Mainframe, Mini; Micro - at all levels.

Your Objectives Broaden your experience, earn more money; obtain better benefits, get more recognition, achieve promotion, move into CONTRACT work; get a more secure assignment.

Your Geography Work close to your home, move out to the country or seaside; move in to the metropolis, work in the USA, in Europe, in the Middle East.

US.

Established 10 years; 40 recruitment consultants, each specialising in either Operations, Systems and Programming or Technical Sales careers. Dozens of computer specialists placed in new career positions *every week*; 400 contract analysts, programmers, and operations staff on assignments with us around the world; a regular client base of around 500 organisations large and small, many of them household names.

An accurate understanding of the needs and aspirations of computer staff, derived from colossal experience, careful monitoring of feedback, regular scientific opinion surveys (the most recent commissioned by VLI was reported in Computing in December); by far the largest contract workforce in our industry in the UK, with by far the most accumulated experience of the contract market; a policy of adhering to the highest standards of professionalism and integrity.

Head Office in London, other UK offices in Croydon, Birmingham, Manchester – our consultants know your preferred location well. We have our own offices manned by UK-experienced staff in Los Angeles, New York and the Mid-West; we are represented by carefully selected consulting firms in Holland, Greece and Saudi Arabia; currently approximately 160 UK staff are on lucrative overseas assignments with us.

Ring the appropriate UK office, or complete the coupon. We'll be pleased to help you.

Your move.

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Computer People London 01-836 8411
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Computer People Midlands 021-643 8501
Alpha Tower, Birmingham B1 1TT
Computer People North 061-491 1666
Sovereign House, Stockport Road, Cheadle, Cheshire SK8 2EA

Analysts & Programmers: for Overseas

Computer People International 01-836 8411
VLI House, 68/69 St Martin's Lane, London WC2N 4JS

Operations Staff: UK & Overseas

CoOperators 01-836 8411
VLI House, 68/69 St. Martin's Lane, London WC2N 4JS

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I am interested in ☐ contract work ☐ permanent work

My preferred location is ☐ London area ☐ Southern Countries ☐ Midlands/Wales ☐ North/Scotland ☐ USA ☐ Europe ☐ Middle East

☐ Operations ☐ Systems & Programming ☐ Sales

Name.....

Address.....

Tel (home).....(work).....Age.....Years experience in DP.....

VLI group

Mail to FREEPOST, VLI House, 68/69 St Martin's Lane, London WC2N 4BR

Help us design the future and we will take care of yours.

Hardware/Software Designers — **£8,000-£10,000 pa London or Swindon**

Maintaining our leading edge in office automation systems demands innovative and high quality products — and a high calibre of technical support from our Staff. As a result of accelerating development plans, we are able to offer a number of Design Engineers the opportunity of working in Swindon or London on sophisticated microprocessor based projects designed to meet the converging needs of data processing and office systems.

We are looking for a minimum 2-3 years hardware or software design background — or ideally a blend of both, with previous office automation experience being very welcome. Alternatively, candidates should be well versed in one or more of the following areas:

Software: Distributed Processing, High Level Languages, Communications Protocols, Database Techniques

Hardware: Digital Logic Design, Data Communications, Analogue Signal Processing, Custom Logic Array Design

We can offer a very stimulating and rewarding career path, one where initiative, self motivation, and enthusiasm will be amply rewarded.

As well as excellent working conditions and benefits, we provide relocation assistance where appropriate, and will afford every assistance with your relocation plans.

These vacancies are as a result of planned expansion and we invite you to share in our continuing success.

For a confidential discussion, contact our Advising Consultant: **Martin Stainthorpe** on **021-236 3781** or 021-744 1862 (evenings and weekends).

Technical, Sales & Management Appointments

SCR

Specialist Computer Recruitment Ltd

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NORTH: International House, 84 Deansgate, Manchester M3 2ER, 061-833 0427
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Microcomputer Sales to Professional Practices

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A unique opportunity to be part of bringing the micro to the medical and paramedical professions

Central London

Our Client has created an outstanding reputation by supplying computerised practice management systems to the dental, medical and veterinary professions over a number of years.

As a result of the Company's long standing involvement in the above fields, a highly advanced and sophisticated multi-user system has been developed, based on a well-tested micro-computer. The system which divides up into "business" and "clinical", but can be fully integrated, costs typically in the region of £15,000 and is tailor-made to suit the practice in which it will be operating.

To date the system has been promoted by the original development team, backed by a professionally conducted marketing campaign in the press and at major exhibitions. However, to achieve further growth, our Client now wishes to appoint a capable Sales Executive who desires the key sales position within this small, creative company. Once successfully established in this new post further progression is potentially unlimited, with additional career opportunities available through associated companies.

Ideally you should be well educated, have a technical background in data processing together with an ambitious attitude towards sales and business development in general. The ability to sell to professional people is important and though a working knowledge of dental or medical practices is desirable, it is not essential.

For a completely confidential discussion regarding this exceptional appointment contact **Peter Dudgeon** on **01-935 0671** (24-hour answering service) or on **St. Albans 37702** evenings between 8 and 9.00pm.

Technical, Sales & Management Appointments

SCR

Specialist Computer Recruitment Ltd

SOUTH: James House, 46 James Street, London W1M 5HS, 01-935 0671/486 0461
MIDLANDS & INTERNATIONAL: 35-37 Great Charles Street, Queensway, Birmingham B3 3JY, 021-236 3781
NORTH: International House, 84 Deansgate, Manchester M3 2ER, 061-833 0427
BELGIUM: Avenue Louise 327, Boite 4, 1050 Bruxelles, 010 322-640 7151/71
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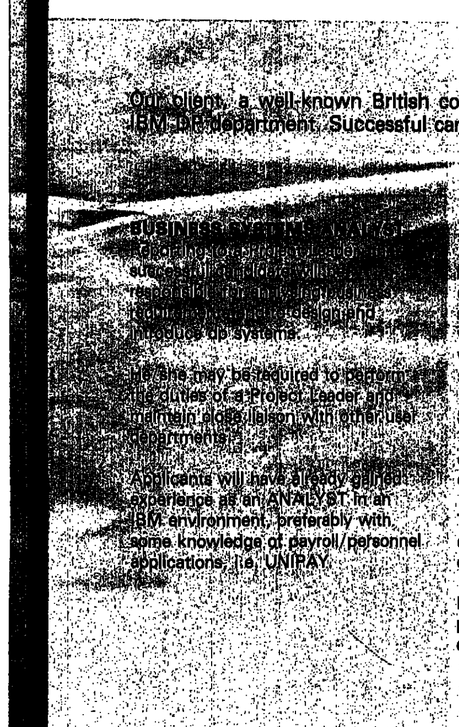
EUROLINK
COMPUTER SERVICES LIMITED

A FRESH START

1983

Our client, a well-known British company and a leader in its field, based in Essex, is currently expanding its IBM DP Department. Successful candidates will be developing new CICS/DL1 systems using PL1.



BUSINESS SYSTEMS ANALYST

Reporting to the Project Leader, you will be responsible for the analysis, design, programming and implementation of new systems.

Years' experience in a commercial environment with OS/VS1 or OS/VS2, on-line systems and software packages.

SHIFT LEADER

To maintain the smooth running of the computer department. Training and guidance will be given to those in charge of two 2nd generation and two 3rd generation computers.

The appointee will be kept up-to-date on all operating procedures in order to provide on-the-job training.

It is essential that the candidate will have previous experience in an OS/VS1 or MVS environment.

PROGRAMMER

The successful candidate will have gained 2 years' experience in DP with at least 12 months using PL1. He/she will work at an intermediate level writing programs and assisting with system testing.

All these vacancies offer very good opportunities for advancement, as the growth of the DP department indicates. Excellent salaries, benefits, relocations packages are offered to suitable candidates.

To apply for these positions, please send a detailed technical career resumé to Eurolink Computer Services Ltd., 102 Queens Road, Brighton BN1 3YF. Alternatively, telephone **JENNY BURR** on **0273 202316** (24-hr answering service)

SYSTEM 34 PROFESSIONALS

THE BEST OPENINGS IN SYSTEM 38 YOU'LL SEE IN '83

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Computer Systems Ltd.

* Wilkins Computer Systems Ltd are specialists in the development of commercial applications software for users of IBM-System 34 and 38.
* They are a structured, prestigious, and highly successful organisation based in truly superb offices in the City.
* The working conditions and career opportunities at Wilkins are excellent. Full training is given in which ever direction needed for you to develop your skills to their full potential.
* For these positions you will need at least 2 years relevant experience within the DP industry backed up by a good knowledge of RPG II or III, solid analysis skills and a flair for Leadership.
* You will be dealing with users of limited technical experience who will need assistance from definition of requirements through to implementation, and thus you must have the ability to communicate with clients at all levels.

For more information regarding these exciting opportunities at Wilkins Computer Systems, telephone Nick Clements (who has similar experience to yourself) on 01-734 7394 during working hours or on 01-546 7813 during the evening or at weekends.

Snr. Analyst/Programmer
Analyst/Programmer
Salary: to £13,000 + CAR + substantial benefits
City based

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Sonar creates a new dimension for your software capabilities

Plessey Marine Research Unit at Templecombe in Somerset is at the centre of advanced sonar technology, and is looking for high calibre, degree-qualified people, preferably in electronics or computer science, to share in the technical leadership of its teams engaged in the rapidly expanding field of Marine Electronic Systems.

The projects are in distributed processing, specialised hardware control, micro-processor aided displays, and signal processing. Opportunities exist for all levels of experience and aptitude.

Systems Analysts able to lay down the framework of a multi-processor design from customer requirements, and to communicate and control these designs during implementation.

Software System Designers able to develop the detailed software design concepts and lead technically a team of implementation programmers.

Programmers wishing to develop their existing programming abilities and level of design responsibility.

Software is developed using a Host-Target approach. The host computers are DEC PDP11 and VAX machines, supporting INTEL 8086 (with 8087 option) and TI 9900 microprocessors. Languages used are CORAL 66, PASCAL, and ASSEMBLER, which are normally used in conjunction with a highly developed MASCOT design and implementation methodology.

Salaries will be in a range up to £10k. Big company benefits include help with relocation to our attractive part of the West Country, within easy reach of the South Coast and enjoying the advantage of reasonably priced housing in surrounding country towns and villages.

Please write with brief career details to Peter Willifield, Technical Resourcing Manager, Plessey Marine Research Unit, Wilkinthroop House, Templecombe, Somerset BA8 0DH. Or ring him on Templecombe (0963) 70951. Please quote reference TEM/234.

PLESSEY
electronic systems

Switzerland Telecommunications

Salary package £14K to £20K+

Hasler in Britain and in Switzerland are totally dedicated to communications systems of the future. Hasler (Great Britain) Ltd., are about to recruit specialists to second to projects within their parent company in Bern, the capital of Switzerland. Bern is a small picturesque, German speaking city, where the cost of living is favourable to London, accomodation is easily come by, commuting to work is down to a minimum, standard of education is high and winter sports facilities are excellent.

As well as the obvious attractions to such a location, what do Hasler, as a company, have to offer? Stop and think for a moment. What would induce you to make such a move? Almost certainly at the top of your list will be job interest, job security, future career prospects and salary package.

Current projects include, among others, converting the Swiss Telecommunications to a digital exchange system, and all that such a mammoth task entails in designing, developing and implementing such a system. It would be difficult to envisage a company which could offer greater security, since Hasler have remained virtually untouched by world recession, indeed, throughout this economic crisis they have continued, and are continuing to expand into future technology. Future prospects within the company are excellent. Working in a developing environment, opportunities to learn and develop one's self abound. The salary package is negotiable according to previous experience and obvious capabilities. However, for the uninitiated the aforementioned salary range in a town such as Bern would constitute a very comfortable standard of living.

Applications are invited from candidates educated to degree or H.N.C. level in the following capacities.

Systems Designers/Engineers

PABX Applications

You should essentially be familiar with hardware and/or software design of modern SPC PABXs and possess a good knowledge of PABX system architecture with emphasis on features and operational procedures.

4 years+experience in digital telecommunications systems with mini/micro computer control is essential.

The Software Systems Engineer must also be proficient in a high level language and have experience of implementing Real Time systems.

Both the Hardware and Software Systems designers must be able to prepare technical specifications, define and produce acceptance test procedures, plan development of future systems.

The above activities call for effective communicative skills, thorough understanding of user requirements and interpretation of these into technical design.

The German language whilst desirable, is not mandatory, although willingness and an ability to learn is.

Digital Switching Systems

Your experience in, and your broad knowledge of, telecommunications, will be utilised in the area of development of future digital switching systems, paving the way towards ISDN.

For these posts you must have a broad knowledge of "state of the art" PSTN and digital exchange design with specific knowledge in one or more of the following:

* SPC switching systems e.g. System X, System 12, EWSD, AXE.
* Relevant CCITT specifications.
* Signalling Systems Design e.g. S.S. No.7.
* Real Time high level language particularly CHILL, CORAL or ADA.
* Synchronous circuit switched data exchange design, based on X21.
* Top level and/or high level design of sub systems such as call handling etc.

4 years+relevant experience is essential.

The German language whilst desirable, is not mandatory, although willingness and an ability to learn is.

Analyst Programmers

Ideally, you should excel at applications programming and have approximately 4 years+broad based experience of Real Time telecommunications systems (System X would be of particular interest) gained in a mini and/or micro computing environment. Applicants should possess a mature outlook and have a good knowledge of the German language.

There are also opportunities for those experienced in compiler design and development of software tools. German language is desirable although lack of this will not impede exceptional candidates.

For further information and to arrange an appointment, please contact Beryl McLaren.

01-836 9719 or 836 9882
Up to 11·00pm each evening and weekends

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Specialist recruitment of Industrial, Scientific, Defence and Technical personnel

12-13 Henrietta Street, London WC2

PROGRAMMING PROFESSIONALS

Career progression in a DB environment

C LONDON £8,000-£10,000

You've got a sound programming background, and like working to good professional standards. For valid reasons, you are now considering a career move.

You may well be interested in an opening which offers:

- a good proportion of development work – mainly on large-scale systems for a variety of users
- Sound career prospects, with promotion a real possibility, in a large, well-organised installation where you can progress without looking around for a new job
- good training, including modern techniques such as database and on-line methods, to enhance your skills and provide better job satisfaction
- a healthy salary, with provision for regular advancement.

Acting for clients, we are looking for competent programmers with upwards of two years' high-level experience. COBOL is the main language used, and preference will be given to candidates with good COBOL knowledge. However, the main requirement is for sound programming experience and ability, and if you have been using other high level languages, we would nevertheless like to hear from you, as our clients would be willing to retrain you.

Our clients have an extensive schedule of work on hand, thus there are openings at several levels. Please contact us by phone or letter quoting ref. 927 (messages recorded after hours) for early consideration.

EDP SYSTEMS 01.637 5796
52-53 Margaret St. London W1N 7FF

Computer Engineer

c.£9,500 + car

RCA is a company with a high international reputation and wide interests in the electronics engineering field.

A challenging opportunity exists for a mature, self-motivated communications engineer to maintain the message switching systems at Sunbury, a position which offers job satisfaction and wide involvement in varied activities.

As the technical expert for this side of our operations you will need to be familiar with mini-computers, moving head disk drives, fixed head disk drives and multiplexers. A knowledge of magnetic tape units and line printers is also an added requirement.

Some experience in data and telegraph communications would be an added advantage.

An Escort 1-6 estate is provided, although minimal travel is involved, and the position attracts the normal range of benefits associated with a major international company.

Please telephone, or write with full c.v. to Mr R. Stainer, RCA Limited, Lincoln Way, Windmill Road, Sunbury-on-Thames, Middlesex. Tel: Sunbury-on-Thames 85511.

RCA (21511)

Analyst/ Programming Manager

Kingston c.£9,500

Bentalls is the largest independently-owned store group in the UK and firmly established as a leader in the retail trade.

We are now looking for an Analyst to run a small team of Programmers at a time of considerable change and innovation in the company.

Preferably 25-30, with programming and analysis experience, the ideal candidate will be looking for his/her first managerial appointment. Answering to the DP Controller, the job is largely one of liaison with users regarding system requirements; producing system specifications; ensuring that the fullest use is made of staff and equipment resources.

Plans for the development of hardware will be discussed at interview.

Salary will be negotiated around £9,500, depending on experience. Benefits include a 25% staff discount, medical assurance and 4 weeks holiday.

Please send a full c.v. to Peter Flower, Personnel Controller, Bentalls plc, Wood Street, Kingston upon Thames KT1 1TX, Surrey.

Bentalls *Share in our success!* OF KINGSTON (21182)

OEM and MAJOR ACCOUNT SALES EXECUTIVES

Graphics Equipment Terminals Printers
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£20,000

Realistic and highly achievable earnings

2 litre car

LONDON

A progressive, British Company, operating within the UK, US and Europe, our Client has successfully penetrated the OEM and large END-USER market place, securing numerous and notable major accounts, particularly in the Education Sector, where it has well established regular Clients.

The Company has grown and developed from its original involvement in maintenance and service to its present position as the key distributor of an excellent and well known range of both systems and terminals/printers and manufacturer of its own graphics equipment. It attributes its success to its impressive product offering together with a superb nationwide engineering and support back-up where strong emphasis has been due to the company's traditional trading activities. Further, the company has demonstrated its ability to accurately interpret and quickly respond to market trends, in December 1982, launching its own manufactured graphics equipment.

In January 1983, this new product launch, together with the recent opening of a brand new UK manufacturing plant, sees the Company poised to capitalize on the standing it has achieved to date, by expanding its sales effort.

The opportunity presented here, is to become part of a positively directed, well supported, professional sales team and to enjoy generous remuneration, because the Company is sales orientated and therefore keen to reward achievement with high earnings, incentive prizes and an attractive income package with benefits including family BUPA.

You will be aged C. 25-32, have enthusiasm, the proven ability to win new business and, equally importantly, sufficient maturity and credibility to maintain and develop long term substantial accounts. Although you should have a relevant background for systems sales, in the terminals/printers area, product training can be given if you possess the essential personal qualities and a sales track record in capital goods.

For an interview and comprehensive information contact **Grace Baskeyfield 01-935 0671** or **01-891 1555** (evenings) or submit a Curriculum Vitae to her at the London office.

There is the possibility also of an opportunity arising in **Scotland.**

Technical, Sales & Management Appointments

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1) National Engineering Liaison Manager c£20,000 plus Executive Car & Bonus
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3) Customer Support Engineers. £10,000 Package & Car.
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01-637 0781
(Office: 8.30 a.m.-6 p.m.)
01-794 2876
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ATA COMPUTER RECRUITMENT
209 Great Portland Street, W.1.
(out of hours answering service)

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The following personnel are urgently required by one of Saudi Arabia's largest computer consultancies.

SENIOR SYSTEMS PROGRAMMER
c. £22,500 tax free Ref. S2065
Required to define all software requirements for the Company's projects and supervise their installation, implementation and commissioning.
Extensive IBM experience is required using DOS/VS, DOS/VSE, CICS and VSAM/BTAM. Additional experience on Digital, HP or DG would be useful.

SENIOR SYSTEMS ANALYSTS
£20,000+ tax free Ref. S2066
Will examine new projects requiring computerisation then formulate specifications and designs for development by the Company's analysts and programmers. A University degree is required with at least 10 years diversified DP experience, including 5 at supervisory level. Good working knowledge required on IBM such as 3031, 4331, 4341 and systems as identified above.

OPERATIONS SHIFT LEADERS
£15,000+ tax free Ref. S2067
At least 4 years concentrated experience in at least two of the following: DOS/VS(E); realtime systems using CICS; VTAM; network communication control facility usage. Should have spent at least one year as shift leader.

Our Clients are offering one year renewable contracts to successful applicants and the possibility of married status to the senior personnel. Free furnished accommodation, local transportation allowance and 30 days paid UK leave will form part of the standard employment package.

Write or telephone NOW for an application form, quoting the appropriate reference number:
Andrew Neatby-Smith, Lansdowne International Ltd., Lansdowne House, 36 Great Smith Street, Westminster, London SW1P 3BU.

01-222 3264
(24 hours).

Lansdowne INTERNATIONAL RECRUITMENT CONSULTANTS

SHORTLISTED WITHOUT EVEN APPLYING

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SENIOR ANALYST PROGRAMMERS
Banks. Salary negotiable up to £15,000 + relocation assistance.
Graduates under 35 years of age are required by a highly successful major company with progressive ideas, to work in a small team in a luxury floor type environment on total computerisation of manufacturing process. Good experience of programming and systems analysis on MINIS essential. A large mainframe will be controlling the MINIS on all aspects of manufacturing from material control to robot trucks.

CREATIVE OPPORTUNITIES
For the experienced marketing professionals or the budding Sales Executive in North London/South Hertfordshire area. Very attractive Salary + Sumptuous.
Three professionals with experience in the Business Systems industry, either currently marketing or selling, are required to forecast and plan this Company's future products within its local area networks, inter-connections and terminals specific to the market. Graduate level applicants ideally in the 26-35 age group will be joining this fast expanding Communications Systems division of a major U.K. company.

GRADUATE SOFTWARE ENGINEERS AND PROGRAMMERS
Bracknell/Portsmouth/South Wales areas.
Salaries attractive depending on experience.
To join a small programming team working on design and implementation of Real Time Systems, Mathematical Modelling and Simulation using COBOL 80 and NASCOT in the fields of defence applications.

SOFTWARE ENGINEERS/SYSTEMS ENGINEERS
Herts — Salaries negotiable depending on experience.
Graduates required with modelling experience in a real-time environment who can take raw algorithms and translate them into Systems definitions or Microprocessor Software engineers with high level and assembler language of Communications/Network protocol and Simulator/emulation specialists with micro background, or Control Systems Engineers in the vivacon industry.

IBM SERIES 1 ASSEMBLER PROGRAMMER
Belgium — Attractive salary negotiable.
Experience in telecomms and real-time systems required.

SALES EXECUTIVE
Based Bch Herts
Very Attractive earnings package + 2 litre car.
A successful sales executive in the computer peripherals market with experience in selling disc drives to key accounts throughout the U.K. is required for this rapidly expanding new division of a major world wide corporation.

PROGRAMME MANAGERS
North London/South Hertfordshire area
Very Attractive Salary + Benefits.
An expanding major U.K. Company in the Business Systems field is looking for three programme Managers for (a) COMMUNICATIONS & PROCESSOR SOFTWARE DEVELOPMENT, (b) SYSTEMS DESIGN & DEVELOPMENT. Candidates should be of Degree level within a relevant discipline and are likely to be in the 28 to 35 age group. The role of the Communications Software Division is the development of a comprehensive range of Electronics Office Systems including local area networks. Therefore the ability to handle projects and liaise with both technical and non-technical personnel is essential.

MATHEMATICAL MODELLERS
Bracknell/Portsmouth/South Wales areas.
Salaries to £15,000.
Graduates with at least two years' experience in mathematical modelling and simulation programming (using FORTRAN) for defence projects.

PROGRAMMERS
Bch Wood
Salaries negotiable.
Experience essential in IBM Mainframes ideally with ASAP. Knowledge of SHADOW/CICS/TOTAL would be useful.

SOFTWARE ENGINEERS AND PROGRAMMERS
Portsmouth/Bracknell/South West countryside/Hampshire/Dorset/Wiltshire/Scotland areas
Salaries from £8,000 to £15,000.
We have many outstanding assignments for Graduates with at least one year's experience in Scientific Software at Real-time Systems. Knowledge of (a) Ada, PASCAL, MASCOT, MACRO 11 or ASSEMBLER is essential.

For an application form, please send your coupon to George A. Lowi, Beechwood Appointments Register, FREEPOST, London W3 8BR (no stamp required). Telephone 01-992 8647 (24 hours).

Name.....

Address.....

.....

Ref. CW13/1 (2180)

Beechwood APPOINTMENTS REGISTER

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★ £9,500 Start with Early Review
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★ BUPA
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★ Training in California

Our client is a major manufacturer of high performance Mini-Real-Time, distributed processing networks and small business systems. Group Sales exceed one billion dollars with over 20K installations world wide. Quality is the hallmark of our client who seeks bright engineers seeking a CAREER and challenge.

If you have computer peripheral experience and seek real opportunities – not just another job, call Keith Wallis now!! (2160)

ALLTRONICS PEOPLE (AGY)
01-543 4844/04865 3153 (evgs.)

Writer For New Project

The team which produces Practical Computing is looking for a writer to work on a new project. What we need is writing talent, it doesn't matter if you have a degree or whether you know about microcomputers. What does matter is evidence of writing ability and a grasp of the detail to push a magazine through its production stages.

Write with CV to: Paul Fisher, Room 509, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

MICRO COMPUTER SALES MANAGER

We are a multiple retailer of office stationery and equipment and have recently expanded into the field of Micro-Computers.

We are looking for a dynamic, energetic person, aged 25+ to control the sales operation in London. Enthusiasm, perseverance, ability to sell and to train others in the art of selling are essential.

Responsibilities will include customer liaison, sales development display and control of computer sales staff.

We will offer a competitive salary, pension scheme and staff discounts.

If you have relevant experience and meet the above requirements apply to BOX NO: 1236.

(2159)

BOX NUMBERS

Box number replies should be addressed to:

Box Number.....

c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS

UCA

NEW YEAR FIXTURES

PRE- & POST-SALES SUPPORT
HERTS./MIDDX. to £12,000 + CAR

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VAX PEOPLE
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BANKING SYSTEMS ANALYST
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SYSTEMS PROGRAMMERS
LONDON £10,000 to £18,000

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CONTRACT PEOPLE WANTED NOW!

P/A	DB/DC ADP PL/1 or COBOL	LONDON W.C.
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SNR. P	PL/1 MVS DB DC	LONDON
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PROG.	VAX TP BASIC COBOL	MIDLANDS
P.A/P	DB VMS/2 RMS TPS	W. LONDON

Telephone Alan on 01-458 8536 Now

PERMANENT PEOPLE WANTED NOW

IBM 4341 COBOL	PROGS.	City £12,000
IBM CICS COBOL	PROG.	E.8 £9,500
IBM 370 PL/1	SNR. PROG.	Enfield £9,000
IBM 4341 PL/1	AN/PROG.	Watford £10,500
VAX VMS B COBOL	AN/PROG.	Bracknell £12,000
CP/M BASIC	AN/PROG.	W.2 £9,000
IP 3000 COBOL	AN/PROG.	Reading £12,000

Telephone Ian on 01-458 8533 for details

UCA UNIVERSAL COMPUTER ASSOCIATES (UK) LTD. Suite 8, Hobart House, 20 Aldersgate Street, London EC1A 4BP. 01-606 7830

RPG 2
City **£8,000-£12,000 + Mortgage**

Analyst Programmers and Programmers are required by American banking organisation who are currently running IBM System 34s and offer all new online development work on a range of financial applications. Banking experience would be an asset though not essential and the opportunity for travel to Europe and the U.S. must be considered. REF: BH.

MVS COBOL
West End **£8,000-£13,000**

Leading Petroleum company are seeking Programmers, Analyst/Programmers and Analysts to work on IBM 4300 kit on a wide range of applications. Exposure to T.P. or database techniques would be an advantage but excellent training will be provided in CICS and DL-1 if candidates lack previous exposure to online work. REF: BH.

SYSTEM 34 (Retrain on 38)
All Areas **£7,500-£13,000**

We have several clients currently either running IBM System 38s or in the process of installing the new machines. Requirements vary from Junior Programmer to Senior Analyst/Programmer (with increasing responsibility) level and experience of RPG-2 gained on either System 3 or 34 kit. Retrain to RPG-3 in a new environment and gain excellent database and online experience. REF: BH.

PL/1 ANALYST/PROGRAMMERS
£9,500-£11,500

Three major financial organisations have now defined their recruitment plans for the New Year. At least 2 years sound PL/1 experience is essential to work on IBM 4341 under MVS or DOS/VSE, on a range of Online and Batch systems. Benefits include Mortgage subsidy, Daily Travel Expenses, NCP, etc, etc. REF: VC.

IBM SYSTEMS PROGRAMMERS
(All levels) **£8,000-£12,500**

Vacancies exist in all areas of Systems Programmers from Junior (with 12 months' experience) to Senior levels. IBM mainframe (303X and 4300) installations require knowledge of OS/MVS, DOS/VS(E), VM, CICS ASSEMBLER in a wide range of differing environments from small end user environments to installing software products (in a consultancy role) to Banking where Mortgage benefits apply. REF: BH.

SOFTWARE DESIGNERS
Maidenhead **c.£13,000**

R & D Mathematical Modelling and real-time background required by organisation utilising VAX, PDP, INTEL equipment (similar positions exist in other areas). REF: JH.

PROGRAMMER/ANALYSTS & ANALYSTS
Reading, Staines, City, Essex **£8,000-£12,000**

Commercial experience, using either BASIC +2 or COBOL on DEC (RSTS/E) or VAX Kit, required by development teams in above areas. Senior analysts with other hardware backgrounds may also apply. REF: JH.

PROGRAMMERS, SENIOR PROGRAMMER & ANALYST/PROGRAMMER

Large company in Herts requires from one year's BASIC +2 (consider BASIC+), RSTS/E, Commercial programming experience, up to supervisory level, for positions paying £8,000-£11,000. REF: JH.

COMPUVAC PERSONNEL SERVICES LTD.

Compuvac House, 121 City Road, LONDON EC1V 1JB
(Next to Old St Tube)

Tel: 01-253 5042 (24 hour) or 01-250 0456
After 7pm and weekends 01-254 2829 Vic

ANALYST/PROGRAMMER
Middlesex **£9,500**

Two years BASIC + RSTS/E, with some analysis experience, required by small team developing Production Control and other Commercial Systems. REF: JH.

JUNIOR PROGRAMMERS
Central **£7,000-£9,500**

Several vacancies exist for upwards of 9 months' experience of COBOL (either DOS or OS/MVS) on any IBM mainframes. For one position a knowledge of CICS or DL-1 would be a definite advantage but full training in online techniques will be provided in the remaining positions. REF: BH.

ICL VME/B ANALYST/PROGRAMMERS
£8,500-£13,000

Leading Consultancy currently has urgent requirements for several Analyst/Programmers with solid COBOL gained in a VME environment. These positions will suit conscientious, ambitious candidates, able to deal with clients at any level in any situation. REF: VC.

SENIOR PROGRAMMERS
to £10,500

HONEYWELL LEVEL 66 user requires good COBOL, DMIV and TP skills with circa 4 years' experience to work on all general Commercial Applications. Perks include BUPA, LVs, Discount on Company products. Relocation possible. REF: MN.

ANALYST/PROGRAMMERS
to c.£10,000

HONEYWELL LEVEL 64 user with DPS machine under GCOS REL 1E seek sound analysis skills linked with good TDS/IDS programming to work on Commercial/Manufacturing systems – c. 3 yrs. + experience required. REF: MN.

PROGRAMMERS THRU ANALYST/PROGRAMMERS
to £13,500

HONEYWELL LEVEL 66 Staff required at all levels to work in Software House Environment. Good COBOL, Online and Database skills needed. Opportunities for travel. REF: MN.

ANALYST/PROGRAMMERS
c.£10,000

HONEYWELL LEVEL 6 user requires sound COBOL, Screenwrite an added advantage, as is Database/TP expertise. Plenty of scope for Systems Analysis work in Commercial Environment Package consists of Good basic, Free Lunches, Bonus, Plus usual large company benefits. REF: MN.

H.P. 3000 ANALYST/PROGRAMMER
to £13,000

Insurance company based in the West End requires experience of COBOL, IMAGE, QUICK or QUIZ with systems design and solid project involvement. The work is on all new development of online database systems and there will be involvement at all levels. Excellent company benefits apply. REF: VC.

VME/B SYSTEMS PROGRAMMER
Central **to £12,000 + Mortgage**

Financial organisation running ICL 2960 requires a Systems Programmer with upwards of two years' experience to work in an expanding department. Communications knowledge would be an advantage, and a range of excellent benefits, including mortgage subsidy, will be offered. REF: VC.

(2176)

WHO ARE JVG?

JVG RECRUITMENT is an exciting international recruitment company set up early in 1981 by **JOHN GOLDSMITH**, one of the best known personalities in the computer recruitment field. Before establishing JVG John was Managing Director of Lowndes-Ajax Computer Recruitment and also of John Goldsmith Computer Recruitment Ltd, a company he sold in 1979.

Recruitment Consultants

We are expanding, and by looking at the next few pages you will see some of the advertisements we are currently carrying. However, we now need to recruit some staff for ourselves. We are based in Camberley, Surrey, about fifty minutes from Waterloo by train and twenty minutes from London Heathrow. We have pleasant offices and we are 'raring to go,' but we can't do this without some additional staff. We would, therefore, like to meet recruitment consultants who are anxious to join a company which is prepared to share its success. We will be attractive to you because we are growing, because we have excellent international recruitment contacts, maybe because we are out of London or maybe because we shall be opening an office in London at the end of this year. We believe that recruitment consultants should be paid by results. Therefore, this is an opportunity to have a much bigger share in your own personal success than you would often find.

We are part of Search Partners International, a company jointly owned by JVG, Profile Management Consultants in Australia and Executive Search Group in New Zealand. During the past year we have placed people in Hong Kong, Japan, Australia and New Zealand. We have recently signed an agreement with Systems Technology of Arabia to be their sole recruitment agents in this country, and this will provide us with a substantial base of business during 1983.

Therefore, why don't you give us a call? We are anxious to meet young, enthusiastic, ambitious recruitment consultants. There is a genuine opportunity to progress within our organisation. If you are interested please send a short history to John Goldsmith, or telephone him to discuss any interest you may have. You can be quite certain that complete confidentiality will be maintained.

JVG RECRUITMENT LTD
JVG Recruitment Ltd., Sentry House, Frimley Road, Camberley, Surrey.
Tel: Camberley (0276) 29213 (24-hour answering service). Telex: 858386.
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(2110)

UNITED ARAB EMIRATES

ASSISTANT TRAINING OFFICER

Datamation Systems, a leading computer services company in the United Arab Emirates and one of NCC's international training centres, is seeking an additional person for their training centre. This person will initially be responsible for presenting the introductory and programming courses.

- Minimum 5 years in DP
- Indepth knowledge of Cobol and basic knowledge of Fortran an advantage
- Practical experience in structured programming techniques
- Proven record in training
- Under 30 years of age

This is a permanent position, on single status, with the usual conditions applicable to the area including a generous tax-free salary.

Applications with cv should be addressed to:

Training Manager
Datamation Systems
PO Box 50404
Dubai, UAE

(2177)

Computer Consultants & Personnel Services

TASK FORCE

(0782) 410217
44 Kingsway, Stoke-on-Trent, Staffs, ST4 1JH

BAHRAIN
SYSTEMS ANALYST/PROJECT LEADER
- To lead team of 5 people
- Indepth banking experience essential
- Tandem experience desirable

Initial contract: 2 years. Salary/rates: negotiable accommodation and airfares provided

S YORKSHIRE
PROGRAMMER/ANALYST
- To work on credit clearing project
- Cobol essential, Algol advantageous
- Burroughs B6900/B7800 experience

Initial contract: 6 months. Start Date: Feb 83

W MIDLANDS
PROGRAMMER
- Cobol and assembler programming
- ICL system 10/system 25

Initial contract: 6-9 months. Start date: Immed/ASAP

NORTH-EAST
IBM MVS JCL WRITER
- Must have experience of mass storage (MSS)

Initial contract: 6 months. Start date: Feb 83

LONDON
PROGRAMMER
- VAX 11/780 Macro 32

Initial contract: 3 months. Start date: Immed/ASAP

ABU DHABI
SENIOR OPERATOR
- IBM system 34
- with some RPG 11 programming experience

Initial contract: 4 weeks. Start date: Immed/ASAP
Tax free. Free flights and accommodation

SOUTH WEST
ANALYST/PROGRAMMER
- Hotswiss level 66/DPS8
- IDS/TDS/DM IV, Cobol

Initial contract: 3 months +. Start date: Immed/ASAP

(2177)

EXTRA TALENT

IN THE HUMAN SHAPE OF

SYSTEMS ANALYSTS & PL1 PROGRAMMERS

Your skills need not be "Out of this world" to merit consideration by our client, whose name is an international symbol of quality and prestige. With modern offices near Watford, new development work on IBM 4341, database and on-line techniques, new stimulating career opportunities are now offered to TWO SYSTEMS ANALYSTS and TWO PL1 PROGRAMMERS.

SYSTEMS ANALYSTS...Ideal candidates will be under 35, with 2-4 years experience on any machine. Preference will be shown to those people who have been involved in projects from feasibility to implementation. Plus factors are knowledge of CICS DL1 or IMS.... but training will be provided for suitable applicants.

PL1 PROGRAMMERS...Here the requirement is a minimum of ONE YEAR's experience of PL1, with knowledge of CICS DL1 or IMS desirable. Again, training in this useful knowledge is offered.

SALARY RANGE...Analysts...£8500....£11500
Programmers..£8500..£11000
Relocation assistance will be given where applicable.

ELIGIBLE TERRANS PHONE...

BEN LEVENE
COMPUTALINK LTD., DELAPORT HOUSE,
57, GUILDFORD ST., LUTON, BEDS.

LUTON (0582) 28784/454235
Office hours.
WATFORD (0923) 29966
Any other time.

COMPUTALINK Ltd
International Recruitment Consultants

FTB

Project Leader

Real-Time Database Systems

c £11,000 **Berkshire**

One of Europe's leading computer manufacturers who produce a sophisticated range of software products has created a senior position within a highly visible group responsible for specific real-time database systems.

This group's task will be the development of an integrated system relating to the software and literature order processing systems, which will cover all of the company's business activities.

The position, as Project Leader, is critical to the group's development plans, therefore the individual will be a self-starter, have 6-7 years experience of commercial data processing and have good man-management capabilities.

The individual will be versed in real-time systems and database techniques, preferably have a programming background and be able to motivate staff in a pressure environment.

Long term development plans involve the tele-distribution of software by satellite links, and a large upgrade of the existing hardware.

Candidates will be mature and will be given the opportunity to contribute to a demanding yet rewarding environment.

Please Contact: David Handry

Ferguson Thorley Bowles Associates Limited
International Personnel Consultants
15 Clarence Street, Staines, Middlesex TW18 4SU
Telephone: Staines (0784) 59247. Telex: 8814148

PROGRAMMER/ ANALYST

to manage small Data Processing Department

Location: Near London Heathrow

Salary: Negotiable between £10,000 and £11,000

RPG 2 and MAAPICS background required

Our client is Kaynar UK, based near London Heathrow. They currently operate an IBM System 34 and now wish to recruit a programmer/analyst with a good RPG2 and a MAAPICS background to be responsible for implementing MAAPICS and also developing other systems as they may be required. The Data Processing Group is a small one and the successful candidate will play a valuable part in the development of the department. He/she will be expected to meet people at all levels within the organisation, to help educate users and to clearly understand their requirements. The position reports directly to the Financial Controller, and is one of considerable responsibility. Kaynar UK are part of a very large American group supplying parts to the aircraft and aerospace industries. The position offers a career opportunity to someone who is either working in a large data processing department at the moment or in a senior position in a small one to manage a group that is very important in the future development of the company. The successful applicant will be given every support to enable the appointment to be successful, and will enjoy working within a friendly and well-balanced atmosphere.

JVG RECRUITMENT LTD

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(2111)

ARE YOU AN EXPERIENCED IBM PROGRAMMER? WOULD YOU LIKE TO WORK IN AN EXCITING AND SATISFYING JOB ENVIRONMENT? WOULD YOU LIKE TO WORK IN A COMPANY WHERE INNOVATION IS PART OF DAILY LIFE AND IS REWARDED ACCORDINGLY? DO YOU HAVE A GOOD COBOL, ASSEMBLER BACKGROUND? DO YOU HAVE DATABASE EXPERIENCE? DO YOU HAVE EXPERIENCE OF NETWORKS?

Salary: Circa £11,000 Location: Camberley, Surrey

If the answer is yes to most of these questions then our client, GSI, would certainly like to meet you. One of Europe's largest computer service companies, they have their United Kingdom headquarters in Camberley, Surrey. Here they are currently upgrading their 370/145 to an IBM 4341, and they now wish to recruit an IBM programmer who will be able to contribute significantly to development within their programming group. We are not looking for "just a programmer". We are looking for someone who has experience to enable him/her to make a real contribution to GSI's development in the United Kingdom. With an IBM 3081 and an NAS 7000 at their Paris-based computer centre, the company has a great deal to offer to someone who is ambitious to get ahead. It may be a cliché to say that 'the position offers a first class career opportunity' but on this occasion this is true.

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gsi

(2111)

OPPORTUNITIES IN AUSTRALIA!

STATE MARKETING MANAGER – AUSTRALIA

HIGH INCOME PACKAGE + CAR + OTHER BENEFITS AND FULL RELOCATION PACKAGE

Our client is one of the most important computer manufacturers.

With an outstanding record of success in Australia, they now wish to recruit a State Marketing Manager. This position offers a package in excess of $55,000, and could well be significantly more. A company car is provided and there are other significant benefits.

We are looking for someone who has a good track record in a sales and marketing area at management level. The successful applicant will currently either be working for one of the computer manufacturers or in a computer service environment. Our clients will be in the United Kingdom during early February. Therefore, you are invited to send a curriculum vitae to John Goldsmith at JVG or telephone him either at JVG's offices or at his home number which is Camberley (0276) 21266. Complete confidentiality will be maintained.

SALES PEOPLE

WOULD YOU LIKE TO GO TO AUSTRALIA TO JOIN THE ASHES? WELL, MAYBE NOT – PERHAPS WE COULD HAVE PUT IT IN A DIFFERENT WAY.

WOULD YOU LIKE TO GO TO AUSTRALIA – BECAUSE YOUR CAREER IS CERTAINLY GOING TO DEVELOP MORE RAPIDLY THERE WITH ONE OF THE WORLD'S MOST SUCCESSFUL HARDWARE MANUFACTURERS?

VERY HIGH EARNINGS POTENTIAL PLUS CAR.

We are looking for people with a proven sales background. Salesmen who have worked for service bureaux or for some of the computer manufacturers will be most attractive. If you have a good track record selling, how about giving us a call? We can get you to Australia very quickly with full relocation expenses paid.

WE CAN HELP YOU TO EMIGRATE TO AUSTRALIA WITHIN THREE MONTHS

SENIOR SUPPORT STAFF

Excellent salary – plus car

There are plenty of opportunities available in Australia and currently we are recruiting for one of the world's largest computer manufacturers, with vacancies in many Australian states including Tasmania. The opportunities currently available are exceptionally good. Salaries are high, and in most cases a company car is provided.

The Australian computer industry is buoyant, growing at a very rapid rate. We are looking for people with good technical backgrounds who have worked in development environments that cover such areas as commercial and industrial, financial and government applications. Ideal candidates will have worked in the computer services area, or for computer manufacturers, for at least five years. However, those working in *large* user environments would also be attractive. Clients will be in the United Kingdom during February to interview suitable applicants. Full relocation expenses will be paid and there will be significant help and co-operation with the emigration procedure.

Send curriculum vitae to John Goldsmith.

JVG RECRUITMENT LTD

JVG Recruitment Limited, Sentry House, Frimley Road, Camberley, Surrey, England.
Tel: Camberley (0276) 29213. (24-hour answering service). Telex: 858386.
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(2112)

Systems Analyst

Multitone is a world leader in the design, manufacture and supply of radio paging and communications equipment.

To support the expansion of the Company's management information systems, we have a vacancy for a Systems Analyst at our Head Office. Evaluation of existing systems and implementation of hardware and software improvements are allied to a user support function.

The successful applicant will be a graduate in Computer Science, or another numerate discipline with post-graduate training. Business application experience on mini-computer is essential, and a background in manufacturing industry is preferable. Fluency in at least one high level business language is a pre-requisite together with the ability to produce clear, concise support documentation.

A comprehensive benefits package is offered, and the Company's offices are conveniently situated for public transport; car parking is available.

Send full C.V. or telephone for application form to:

The Personnel Department,
Multitone Electronics PLC,
6-28 Underwood Street,
London N1 7JT.
Tel: 01-253 7611

multitone

Systems Programmer

Cheshire **To £9890**

The United Kingdom Atomic Energy Authority has a challenging opportunity for a talented graduate to join a high technology R&D organisation playing a major role in the UK's nuclear power programme.

As part of a small team, you will be involved in the maintenance and development of a large operating system on an ICL Dual 2982 which also provides Batch, RJE and MAC services on a bureau basis to other organisations within the nuclear industry.

The interesting and varied work – ranging from systems testing to new systems development – requires a good degree in Mathematics or Computer Science and sound experience of a large operating system, ideally VME 2900.

Benefits and career prospects are excellent. The site near Warrington is ideal for motorway travel and there is a wide range of housing in the area.

Please contact Ailsa Noble on Warrington (0925) 52153 for an application form, PER, 75 Sankey Street, Warrington, Cheshire WA1 1SL.

PER Executive Selection

(2181)

Applications are welcome from both men and women

DEPARTMENT OF ENGINEERING
Engineering Services Division

Engineering Analyst/ Programmer

Post Ref. E2113 Grade AP4/6
Salary £6873-£8325

Required in the Computer Section of the Department of Engineering based at County Hall, Barnsley, an Analyst/Programmer on Engineering Applications. The work involves developing new programs and adapting existing ones for the engineering activities of the Department which includes highway design and maintenance, structural engineering, traffic, transportation and engineering management. The Section operates a variety of keyboard and batch terminals to the County's DUAL ICL 2966s and other computers and also runs a stand alone graphics system. Analyst programmers are in regular contact with potential and existing users of their programs.

Applicants should be suitably experienced and qualified by an appropriate degree or HND.

Closing date for applications will be 28th January, 1983.

Application form and further details can be obtained from the Chief Executive (Personnel), South Yorkshire County Council, County Hall, Barnsley, or telephone Barnsley 86141 Ext. 266.

South Yorkshire County Council is an equal opportunities employer.

South Yorkshire County Council
SETTING THE PACE

(2172)

"PROFESSIONALS WANTED"

Our client needs the best from the UK in mainly a large ongoing workload, in Saudi Arabia. After 1983 the beginning of a New Era.
Come and work with a go-ahead American corporation.
If you have experience in any of the disciplines you seek the following needs then send your CV at the earliest time with full details of experience and qualifications.

Computer Systems Programmer
Degree in Computer Science, or related with seven-ten years' experience in Generating and modifying the operating mainframe systems. IBM158 and 3033 mainframes. JES 3 – VSO, HP, MVS and knowledge of systems. Ideally COBOL Language. Generation, maintenance of OPS systems. Design and Data Management. Ref. 3704

RDP Systems Analyst
Degree with a minimum of five years' experience in Programming, problem solving, plus systems design in commercial applications. 370/158 and 3033 equipment COBOL, TRANSEC, IMS-DB/DC, PL/I Languages. All ideal criteria is awarded. Ref. 3705

Senior Business Systems Analyst (Not a programmer)
A degree in Business Administration or Computer Science, Maths or Engineering. Seven years' in Office Systems Analysis in particular advanced office systems aided by Wang, IBM, DEC, to mention a few) used such as, Graphics, Word Processing, Telex Automation, Document Distribution, Data and Voice Integration. Knowledge of Computer language is essential such as Basic, Rapid Pervasive Basic. Ref. 22704

All Concerns are for a period of one year and renewable on an ongoing basis.
All are single status Contracts at this time with leave schedules every four months or three-thirteens.

Please send with summary of details quoting appropriate Ref. No. to:
RAY DIAMOND – GERRARDS RECRUITMENT SERVICE

GERRARDS

26 Chapel Side, Montpelier Road, London W2 4LZ

(2148)

SALES
Computer Weekly

Expansion of the leading journal in a rapidly growing publishing market has created three sales positions on one of Britain's biggest trade newspapers.
Computer Weekly has a circulation of 100,000 and is one of the largest titles within IPC Business Press. It runs the country's biggest computer exhibition plus five other related shows, and has recently launched two associated journals.
It is the flagship of the country's largest and fastest growing group of computer journals, and is based at modern offices in Sutton, Surrey.

- **Senior Display Sales Executives**
  These two jobs mean selling display advertising in a major territory containing top-name companies and taking sales responsibility for specific projects within the Computer Weekly team.
  The successful candidates will have a substantial revenue responsibility and should be able to demonstrate the sales experience and drive necessary for it.
- **Exhibition Sales Executive**
  One job to work with the Exhibition Sales Manager selling stands for the annual Compec exhibition at Olympia and its four regional locations plus another specialised event.
  These shows are the country's premier marketplace for the professional computer user, and are challenging targets for the sales person who likes variety and can sell to companies big and small.
  Previous exhibition sales experience is desirable but the right candidate could come from any sales background.

A five-figure earnings package plus car are available to the right people for these three positions. Opportunities for career advancement are excellent.
Write in confidence with full personal, employment and salary history to: Harry Hudson, Display Advertisement Manager, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.
Please quote job ref. again in both text and margin

IPC BUSINESS PRESS
THE LARGEST COMPLEX OF BUSINESS AND SPECIALIST PUBLICATIONS IN THE WORLD

Chief Analyst Programmer

Salary from £10,000 pa

Based in County Durham, this is a key position with a successful manufacturer and exporter of engineering equipment.

The Company has a mainframe computer, and supervising a team of four, the successful applicant will be expected to participate in and control the day-to-day running of the system development function. A large part of the work is on 'real time' applications for the production area.

Applicants aged over 30 should have extensive experience on the development of commercial and industrial systems utilising COBOL programming. They should also have a minimum of three years' experience and a knowledge of either IBM or ICL mainframes.

This is a challenging position offering management responsibility with the need to deputise for the D.P. Manager in his absence.

For an immediate interview, contact Mike Cockburn on Newcastle (0632) 324818
Applications are welcome from both men and women.

H&M

PL1 PROGRAMMER
Poole, Dorset

We require a Programmer with 2-3 years' experience to join a team of Analyst/Programmers involved in the development of an advanced Motor Insurance System using IDMS Base and Data Communications techniques under DOS/VS (E). Initially the main duties will be programming but there will be increasing involvement in systems design and user liaison.

The Company offers the usual range of benefits associated with a large progressive organisation, including mortgage assistance, profit sharing, flexible working hours, and generous re-location allowance, even for single applicants, where appropriate. Competitive salary commensurate with ability and experience. Plus excellent training opportunities.

Please write for an application form or telephone Bournemouth (0202) 764699.

The Personnel Manager
Norman Frizzell Motor & General
Frizzell House, County Gates
Poole, Dorset BH13 6BH

Frizzell Group

NORMAN FRIZZELL MOTOR & GENERAL

LONDON BOROUGH OF SUTTON
CARSHALTON COLLEGE OF FURTHER EDUCATION, NIGHTINGALE ROAD, CARSHALTON, SURREY SM5 2EJ
Telephone: (01) 647 4021/7

PRINCIPAL – L. P. LAWRENCE MSc, CChem FRCS FRSA

LECTURER I

required for APRIL 1983 to teach:
COMPUTER DATA PROCESSING

SALARY: BURNHAM plus £949 London allowance

Application forms and further particulars from the Principal of the College to whom completed forms should be returned within fourteen days of the appearance of this advertisement. (2106)

UNIVERSITY OF KEELE
Department of Computer Science

COMPUTING ASSISTANT

Computer Science Graduate or person with comparable professional qualifications required to support teaching programme in above department. Main interests of appointee will lie in either software systems or microprocessor applications. Salary in Other Related 1B Scale, currently £5,550 to £9,370.

Further particulars and application forms from The Registrar, The University, Keele, Staffs., ST5 5BG, to whom completed forms should be returned by 4th February, 1983.

(2160)

DONCASTER

Doncaster Educational Computer Centre

EDUCATIONAL COMPUTER ASSISTANT AP3 (£5973-£6803)

Applications are invited for the post of Education Computer Assistant at the Doncaster Education Computer Centre. The computer centre has an extensive range of educational micro-computer equipment and provides resources and support to the local schools and colleges.

Applicants should have experience in the use of micro-computers and should be familiar with programming particularly in BASIC. Experience within an educational environment would be desirable.

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Application forms available from the Director of Education, Princesgate, Doncaster DN1 3EP, to whom they should be returned 14 days after the appearance of this advertisement.

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- Real Time Systems Experience.
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If you feel that you cannot measure up to the above but still have a contribution to offer then we would still like to hear from you as we are also looking for a Senior Systems Engineer.
Please apply with a brief c.v. to:
The Personnel Manager,
Box No. 1240
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(REF 2269) £5,500-£10,500

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A major international group of civil engineering consultants has vacancies for Applications Engineers and Programmers initially for work largely but not wholly connected with maritime, particularly offshore, engineering.
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Oil industry experience is a particular advantage and which will attract appropriate salary supplements.
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Please apply in writing quoting the reference number and enclosing a brief but comprehensive CV to J. E. Taylor, Sir William Halcrow and Partners Shortlands, Hammersmith, London W6 8BT.

(2178)

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(2166)

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Contact: Alan Williams
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(2131)

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requires

MINI COMPUTER/VDU OPERATOR

Applicants must have worked in a computer room and be familiar with file handling.

Previous experience on an ICL ME 29 would be an advantage. Preferred age 25-40 years. Attractive salary and conditions.

Please write or telephone for an application form to: The Personnel Officer, National Exhibition Centre, Birmingham B40 1NT. Tel: 021-780 4141.

(2182)

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. . . In the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting and rewarding assignments throughout the UK and overseas.

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- age 25 – 35
- degree level education

Senior Sales Consultant
Location: London (City)

DP consultancy services

On offer
- advancement to directorship with achievement
- competitive salary and top level commission
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- reference accounts
- large contact list

Required
- currently selling consultancy services to DP managers and financial directors
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SALES BIT
Quality of Management – 37

Get it straight from the horse's mouth!

AT the risk of repeating pre-Christmas themes, sales meetings should be entertaining, they should only occur when they are necessary rather than being a cyclic ritual and must result in the participants reaching the conclusion of the meeting with greater knowledge and motivation than when they arrived.

Special events within the sales meeting can do much towards achieving these objectives. So, let's take a final look at some ideas for heightening the level of interest for the perhaps reluctant attendees.

Get someone in from the research and development department, marketing or product planning to talk about probable and possible future products, applications and markets. It's nice to know the company is planning still to be in business next year, and no group of people is more interested than the salesforce.

This kind of talk can be stimulating and encouraging, particularly if the current product is getting towards the end of its natural life cycle. However, it must be a positive and confident presentation, dealing in reality rather than supposition, and backed by illustrations and examples. Anything wishy-washy will be sure to have the opposite effect of that intended.

Most companies have at least one vertical market to which a significant sales effort is being addressed. By that I mean a special application within a particular industry at which a product or product range is aimed. Of course, knowing your product is one thing but truly understanding the purposes for which it can be put to use is another. Salespeople need to be as conversant with the industry and application they are serving as they are with their own product if they are to succeed.

In other words, if you can't speak the man's language how can you expect to understand his problem, let alone apply a solution?

Sadly, the target industry knowledge of many companies is sparse and is exceeded only by the ignorance of their salespeople. While many claim to be selling solutions they are in reality selling tools and leaving the buyer to do what he will.

For those who wish to understand the machinations of their selected market it is not easy to get at the truth. Any information gleaned from within one's own company is likely to be tempered with assumption, prejudice and supposition.

However, there is an excellent way of getting the facts that can be both educational and prove to be a stimulating centrepiece for a sales meeting. Invite a senior executive from a target industry to give a talk on his industry. You will be surprised how much there is to learn. Ask him to tell you what he knows about the structure of his industry, its products, its major companies, its problems, its opportunities, its markets, its future, and so on.

Such a dissertation "from the horse's mouth" can both augment the knowledge of the sales team, and give a considerable boost to confidence and selling fluency.

Many salespeople have only a superficial knowledge of their company and how it works, particularly if they work for one of the large, diversified, multinational corporations. In a large number of cases the knowledge of the individual stretches no further than the bounds of the branch operation.

Contrary to what you might think, salespeople are usually extremely interested in the total workings of the organisation within which they operate, particularly if they are employed by a company that is part of a larger corporation.

Invite a senior executive of the company to come along to the sales meeting and provide the complete picture. Who better than the managing director? (This has the added benefit of telling the troops that the top man is really aware that they exist!)

Apart from the obvious confidence that comes from knowing and understanding more about one's employer there is always a chance that it can lead to the identification of market opportunities in conjunction with sister companies.

You will have decided by now that the possibilities for feature events within the sales meeting are virtually endless. What I hope you will also have decided is that they are necessary. Certainly, they are an excellent way of ensuring that sales meetings are interesting, informative and motivating.

And you will, won't you!

Alan Williams

COURSES

■ TOPICS covered on the National Reprographic Centre's programme of short courses this year include microfilm, word processing, videotex and copier technology. On March 9-10, All You Need to Know About Microfilm gives an introduction to micrographics. A review of advanced micrographics systems is included in a course to be held on May 25 and 26. On March 23, Word Processing + An Introductory Course, is aimed at people considering buying a word processor offering a review of current systems as well as an introduction to the technology. Office and Library Copiers will be held on May 11 and Viewdata as a Corporate Information Tool is scheduled for April 20. Details on Hertford 552341.

PUZZLE ANSWER

LET X and Y be the large and small containers respectively. The solution is then: (1) Fill X; (2) Fill Y from X; (3) Empty Y; (4) Transfer the two pints from X to Y; (5) Fill X again; (6) Top up Y from X, leaving 4 pints in X.

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Successful computer manufacturers are only as good as their products and support. We have an innovative and high quality product range, a key element of which is our internationally acclaimed large scale IBM compatible system, which places us right at the forefront of technology. Therefore to ensure our position is maintained as one of the world's leading manufacturers, our support needs to be second to none. As a result, we now require Specialists to provide expertise within the following areas:

Database Specialist

For this position we are seeking a detailed knowledge of IMS, DB, and ideally DC with experience of sizing and performance tuning, and a good understanding of other IBM compatible database products, and TP software.

Data Communications Specialist

Communications software expertise gained within an IBM environment, utilising large network technology is required, specifically knowledge of VTAM/NCP internals, and ideally additional software such as TPNS, NPDA, NCCF.

In both instances, of equal importance is the ability to demonstrate a high degree of personal communication skills in order to represent our Organisation at the highest level.

If you meet these specifications, we will offer benefits which will include an excellent salary, company car and relocation expenses where appropriate.

If you wish to share our success, contact our Advising Consultant **Peter Lees** on **021-236 3781** (24 hour answering service) or 0902-632141 (Evenings and Weekends). All applications will be treated in the strictest confidence and interviews will be held in Birmingham, Manchester, and London.

Technical, Sales & Management Appointments

(2162)

Specialist Computer Recruitment Ltd

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NORTH: International House, 84 Deansgate, Manchester M3 2ER, 061-833 0427
BELGIUM: Avenue Louise 327, Bolte 4, 1050 Bruxelles, 010 322-640 7181/71
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If you are on contract or are secretly considering taking up contract work forward a cv or contact Jackie Robbins or Sandra Monks today.

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		COBOL DL/1
★ HP3000	Programmer	COBOL
★ Data General Programmer		COBOL AOS INFOS 2

We are also interested in hearing from people with either CICS/COBOL, IMS/COBOL, DL1, PL1, MUMPS or Assembler.

NORTH DEVON DISTRICT COUNCIL
Directorate of Finance

Computer Manager/Programmer — P1
(£9,504-£10,563)

Applications are invited to fill this challenging post within a small but developing Computer Section. The postholder will be required to develop and maintain computer program systems for a wide range of applications on the Council's C.M.C. Reality Mini Computer.

Because of the complexities of the post, at least five years' programming experience would be required, together with membership of the B.C.S. Local Government experience would be useful, but not essential.

Application forms and further details are available from:
The Personnel Officer, North Devon District Council, Civic Centre, Barnstaple EX31 1 EA

Closing date: 28.1.83

(2166)

EDITOR
software

Salary package to £12K

An Editor is required for an important journal development in the professional computer field.

SOFTWARE has been published as an ancillary title to Computer Weekly, Britain's largest computer newspaper and the flagship of the computer publications group within IPC Business Press. It is being established independently and is increasing its frequency to monthly during 1983.

The journal is for computer professionals and covers software for systems of all sizes for every sort of application within medium and large organisations.

It needs a talented Editor able to maintain its authority and standard of presentation. The successful candidate will have all the journalistic skills required of an Editor, though not necessarily a full grounding in the computer industry.

The position is within a small and enthusiastic team in a secure and successful publishing company and offers excellent career prospects for the candidate who can show the energy and commitment needed to make the journal grow.

Write a full application, saying why you feel you have the qualities needed for the job, together with a cv, salary history and examples of your work, to: Simon Timm, Technical Electronics Press Ltd, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

Closing date for receipt of applications 28th January 1983

BUSINESS PRESS

PROGRAMMERS
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Data Laboratories Ltd, part of the Bell and Howell Group, has vacancies for Computer Science or Electrical Engineering graduates with two years' programming experience to work on microprocessor controlled instruments and video displays. Experience of PL/M 86 or 8086 Assembler Language an advantage.

Write enclosing c.v. to:
The Chief Engineer
Data Laboratories Ltd, 28 Wates Way
Mitcham, Surrey

(2172)

UNIVERSITY OF CAPE TOWN

Information Systems Manager

The University has embarked upon the development of new integrated database systems and a new post of Information Systems Manager has been created to head up the administrative data processing and information centre. The Information Systems Manager will report direct to the Registrar and will control 20 plus staff consisting of project leaders, analysts, programmers, data capturing and RJE operating personnel, and will be responsible for co-ordinating the development, maintenance and production of all the University's administrative information systems.

All systems are currently processed on a UNIVAC 1100 system but in the proposed new developments alternative hardware solutions may be employed.

Applicants must have experience in information systems management and experience in on-line database design. A degree or equivalent qualification will be an added recommendation.

The salary range will be R30 000 to R33 000 per annum and in addition a service bonus subject to State regulations is payable annually. The package includes contributory pension scheme, subsidised medical aid, group life assurance, a housing subsidy scheme subject to State regulations and a 75% remission of tuition fees for dependants at UCT.

Applicants should submit a curriculum vitae stating present salary, qualifications, experience, the date upon which duty could be assumed, and the names and addresses of three referees.

Further information may be obtained either from Miss J Lloyd, SA Universities Office, Chichester House, 278 High Holborn, London, WC1V 7HE, or from the Registrar, (Attention: Appointments Office), University of Cape Town, Private Bag, Rondebosch, 7700, South Africa, by whom applications (quoting ref. no. OP/311) must be received not later than 18 February 1983. Late applications may be accepted.

The University's policy is not to discriminate on the grounds of sex, race or religion.

Further information on the implementation of this policy is obtainable on request.

(2178)

FSH (20)

[illegible] Systems Programmer
[illegible] £9,000-£10,000

An Engineering Company requires a Systems Programmer for their IBM Installation on the South Bank of the Thames. Two years Systems Programming in Assembler under MVS/OS is essential for this position. An additional Programming background is also necessary. GMF1/1

ICL Systems Programmers
West London & EC2. £9,000-£11,000

Two clients require Systems Programmers for their ICL 2960 installations with similar experience.
The minimum experience necessary is 2 years VME or VME/B Operating Systems Software Supervisor, Comms or Micro Systems knowledge would also be helpful as would IPA and SCL. GMF1/2

Programmer/Systems Analyst
West London—Middx. **£8,000-£10,500**

An International Company situated in Middlesex requires an additional Programmer/Systems Analyst or a Systems Analyst/Programmer for their IBM 4331 installation. Candidates should have a minimum of 3 years experience in DP Development Two of which should have been in COBOL Programming. Knowledge of CICS/DOS VSE would also be an asset.
A progressive position will allow the successful candidate to be involved on the system. GMF1/3

Programmers
SW London & the City **to £9,500**

Programmers with at least 2 years PL/1 and or Assembler are required for an IBM Installation in SW. London and the City. Use of CICS would also be helpful. Candidates will work on Financial and Business Applications.
Sophisticated Database Systems are in operation. GMF1/4

Programmer & Senior Analyst
Herts/Essex borders **£9,000-£12,000 £12,000-£14,000**

A large retail organisation requires further development staff for their advanced IBM installation near the Essex border. The Systems Analyst should have at least 5 years' systems experience on mainframe with some supervisory know how.
The Programmer will have had 2½ years COBOL and will have prospects of going into analysis. GMF1/5

Senior Systems Programmer
West London **£14,000-£15,000**

A new installation connected with world of show business requires a senior professional for their installation in Hammersmith.
Extensive IBM Assembler Programming is required as are most of the following; DOS/VS—VSE CICS DL/1. The successful candidate must be able to appraise H/W and S/W, choose a Database System and will be responsible for a Technical Support Section that will grow to 4 people. GMF1/6

Programmer or Programmer Analyst
City — EC4. **to £12,500**

A Continental Bank requires a DP professional or one in the early stages of development for their Team based in the City of London.
At the Programmer level, the successful candidate should have a minimum of 2 years' COBOL on medium sized hardware. At the higher level, candidates should have had 4 years experience in COBOL and development. Burroughs and Banking experience would be very preferable also.
A confident sort of person is required, one who could go on to better things. GMF1/7

Programmer & Programmer/Analyst
London WC2 **to £9,000 to £10,500**

A Life Insurance Company requires a Programmer and a Programmer/Analyst for their Central London IBM 4341 installation.
Two years COBOL under OS VS1 is essential for the former position. The second position requires COBOL under OS/MVS and Jackson Structured Programming Techniques.
CICS and DL/1 would also be helpful and all successful candidates should be able to lead a team. GMF1/8

DATAMATICS RECRUITMENT SERVICES
01-399 9183
Datamatics, Freepost, Surbiton, Surrey KT6 5BR

(2122)

Systems Support Project Leader
Buckinghamshire **£13,000-£15,000**

A well-known manufacturer of Consumer Products requires a Professional to head a new team of Technical People. The candidate must have UNIVAC 1100 OS SOFTWARE experience COMMS/DB and DMS 1100 knowledge and overall 7 years + in a DP Technical area. He/She will have to give S/W and Technical Support to the Installation and lead a team of 5 people. GMF1/9

Senior Programmer or Programmer/Analyst
City — EC4 **c. £10,000**

An International Trust Company based in the City needs an additional member for their development team.
The position is flexible so that it could suit a Programmer or a Programmer/Analyst as long as the candidate has 2 years COBOL and DL/1 Assembler/CICS would also be welcome.
The successful candidate will work on D/B administration and be responsible for specification, development and implementation. GMF1/10

Hewlett Packard
Middlesex (2) Berks (2) and W1. **£8,000-£11,500**

Five companies in the above areas require Programmers and Programmer/Analysts for their HP 3000 installations.
Essential requirements are 2½ years HP COBOL. Experience of one or more of the following; IMAGE, VIEW and QUERY would be helpful.
Applications are nearly all Commercial and Manufacturing. GMF1/11

Systems Analyst and Programmer/Analyst
Central London **£7,500 to £13,000**

An International Oil Company requires two experienced Computer Professionals for their London Data Centre. The Systems Analyst should have five years experience working on IBM Systems of which 2/3 years should have been using CICS/COBOL. The Programmer/Analyst should have 1-3 years MVS-JES 2 using COBOL. A knowledge of CICS/DL/1 would also be very helpful. GMF1/12

Programmers
S.E. London **to £10,500**

An International Bank requires two Programmers for their Systems and Programming Division in South East London.
Programmers with 2 to 3 years' experience of COBOL/CICS are needed to work on Foreign Exchange and Money Market type applications. DOS/VSE experience would be helpful.
In addition to a competitive salary normal banking benefits apply to these positions. GMF1/13

Senior Programmer and Systems Analyst
Surrey/Sussex Borders. **to £12,000**

A motor company located in a pleasant town on the Surrey & Sussex borders requires two additional people for their ICL 2955 installation.
The Senior Programmer should have 3 years COBOL experience with a Real/Time and Batch background. The Systems Analyst should have 5 years Commercial Systems experience with some On-Line knowledge and a Programmer's background. GMF1/14

Systems Programming **to £12,500**

A strong IBM Systems Programming background is required by three companies in the City.
Candidates should have at least two of the following:-

– CICS	– ASSEMBLER
– DOS/VSE	– OS/VTAM
– IDMS	– NCP
– COBOL	– MVS

Conditions and benefits vary between the three companies, but they are all progressive and are keeping abreast with the changing technological advances in this area. GMF1/15

Senior Programmer/Analyst
Isleworth. **to £12,000**

A manufacturer of Consumer Products require an additional person for their long established IBM Installation just West of London. A good commercial Systems and Programming background is needed with the emphasis on extensive COBOL experience and at least 2 years' CICS DOS/VSE knowledge would also be useful for this IBM 4341 installation. GMF1/16

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(2122)